Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.11.95 Test oil : ISO 4113

Combination No. : 0 402 046 872

Injection pump

Pump designation : PES6P12OA32ORS3337 EP type number : 0 412 026 770

Governor

Governer design. : RQV300...1250PA1246K

Governer no. : 0 421 815 480

Cust. part No. : CCEP 5155 66-217

Customer-spec. information

Customer : RVI

Motor : MIDR 06-02-26 U4

Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 135 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.10
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

• 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : ← 0.50

Start of delivery mark

Tolerance : \leftarrow 0.50

Check

tolerance NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.80 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 145.0	travel mm : 13.50 Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : +- 1.0	
Check tolerance	_ + GUIDE SLEEVE POSITION
cm3/1000s. : +- 4.0	Rated speed rpm : 1400
Spreed	Rack travel in mm: 10.50
Tolerance cm3/1000 strokes : 5.0	+ Tolerance mm : +- 1.50
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	+ Rated speed rpm : 1250 + Aneroid pressure
Rack travel in mm: -6.00	+ hPa : - + Del. quantity
Tolerance mm : + 0.20	+ cm3/1000 strokes : 145.0
Del. quantity cm3/1000 strokes : 29.0	+ Tolerance + cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : +- 2.0 Check tolerance	+ cm3/1000s. : +- 4.0 + Spreed
cm3/1000s. : + 5.0	+ Tolerance
Spreed Tolerance	+ cm3/1000 strokes : 5.0 + Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 12.0	<u>†</u>
(115) 10005.	Ţ <u></u>
(B) SETTING OF INJECTION PUMP	+ CONTROL LEVER
WITH GOVERNOR	T control lever
	position degree : 296.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0
	RATED SPEED
Rated speed rpm : 300 guide sleeve	rack travel mm : -1.00
travel mm : 1.31	+ Rated speed rpm : 1325
Tolerance mm : +- 0.20	Tolerance 1/min : +- 5
Rated speed rpm : 1333	rack travel mm : -6.80
guide sleeve travel mm : 10.40	Rated speed rpm : 1420 Tolerance 1/min : + 15
Tolerance mm : + 0.15	+
Rated speed rpm : 900	+ rack travel mm : -10.30 + Tolerance mm : +- 0.50
guide sleeve	Rated speed rpm : 1550
travel mm : 6.50 Tolerance mm : +- 0.25	<u>†</u>
	+
Rated speed rpm : 530 guide sleeve	LOW IDLE
travel mm : 3.77 Tolerance mm : + 0.25	t control lever
	position degree : 242.0
Rated speed rpm : 1580	+ tolerance degree : +- 4.0

Testing:

Rated speed rpm : 300 rack travel mm : -6.00 Tolerance mm : +- 0.10

Rated speed rpm : 200

CRT mm min. : < -5.00

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 750 rack travel mm : -1.60 Tolerance mm : + 0.10

Rated speed rpm : 650 rack travel mm : -1.90 Tolerance mm : + 0.15

Rated speed rpm : 400 rack travel mm : -2.50 Tolerance mm : + 0.20

START CUT-OUT

Rated speed rpm : > 130 Rated speed rpm : < 225

Check

speed 1/min : > 110

Check

speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 107.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 650

Dél. quantity

cm3/1000 strokes : 94.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

BREAKAWAY

Rack travel in mm: -1.00
Rated speed rpm: 1325
Tolerance 1/min: +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 112.0

Tolerance

cm3/1000 strokes : \leftarrow 15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Rated speed rpm : 300 rack travel mm -6.00 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 29.0 Tolerance cm3/1000 strokes : +- 2.0Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14,11.95 : ISO 4113

Combination No. : 0 402 048 705

Injection pump

Pump designation : PES8P120A320RS3199

EP type number : 0 412 028 705

Governor

Governer design. : RQV275...1050PA665

Governer no. : 0 421 813 370

Cust. part No. :

Customer-spec. information

Customer

: RVI

Motor

: MIVRO83530

Power KW : 320.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

208.5

Tolerance bar

: **←** 1.5

Test lines

: 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 : 1000 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

3.55 Prestroke mm : +- 0.05Tolerance mm Check

: + 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-8-4-2-7 Firing order : - 3- 6- 5

: 0-45-90-135-180 Phasing : -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : + - 0.50

Start of delivery mark

*NW after s.o.d. : 13.00 Tolerance : +- 0.50

Check

tolerance 'NW : **←** 0.75

Barrel no.

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 11.45 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 203.0

Tolerance	+ Tolerance mm : + 0.50
cm3/1000 strokes : +- 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1250
Spreed Tolerance cm3/1000 strokes : 5.0	Rack travel in mm: 10.45 Tolerance mm: + 1.30
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 275	+ Rated speed rpm : 1050 + Aneroid pressure + hPa : 700
Rack travel in mm : -7.50 Tolerance mm : +- 0.20	Del. quantity + cm3/1000 strokes : 203.0
Del. quantity cm3/1000 strokes : 20.0 Tolerance	+ Tolerance + cm3/1000 strokes : +- 1.0 + Check tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	cm3/1000s. : + 4.0
cm3/1000s. : + 6.0 Spreed	Tolerance : 5.0 Check tolerance
Tolerance cm3/1000 strokes : 8.0 Check tolerance	- cm3/1000s. : 9.0
cm3/1000s. : 12.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 65.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	+ control lever
Rated speed rpm : 275 guide sleeve travel mm : 0.89 Tolerance mm : +- 0.20	position degree : 300.0 tolerance degree : +- 4.0
Rated speed rpm : 1135 guide sleeve travel mm : 8.32 Tolerance mm : +- 0.15	rack travel mm : -1.00 Rated speed rpm : 1120 Tolerance 1/min : +- 5
Rated speed rpm : 781 guide sleeve	rack travel mm : -7.45 Rated speed rpm : 1225 Tolerance 1/min : +- 15
travel mm : 5.68 Tolerance mm : + 0.25	rack travel mm : -10.95 Tolerance mm : + 0.50
Rated speed rpm : 480 guide sleeve	Rated speed rpm : 1350
travel mm : 3.60 Tolerance mm : +- 0.25	LOW IDLE
Rated speed rpm : 1430 guide sleeve	+
travel mm : 11.50	+

	,	
control lever	Ī	Check
position degree	: 245.0	speed 1/min :> 80
tolerance degree	: + 4.0	Check
	1	speed 1/min : < 215
control lever	+	·
position degree	: 10.0 +	
tolerance degree	: + 4.0 +	FUEL DELIVERY CHARACTERISTICS
Testing:	†	Ananaid anagauna
resting:	I	Aneroid pressure hPa : 700
Rated speed rpm	: 275	hPa : 700 Rated speed rpm : 650
rack travel mm	: 275 : -7.50	Nal minutati
rack travel mm Tolerance mm	: + 0.10 +	cm3/1000 strokes : 192.0
	+	Tolerance
Rated speed rpm	: 200 +	cm3/1000 strokes : +- 4.0
CRT mm max.	5 90	Check tolerance cm3/1000s. : +- 7.0
CRI HAH MAX.	: \ -5.80 I	CHIS/ 10008. : +- /.0
Rated speed rpm	: 343 I	Aneroid pressure
	1	hPa : -
		Rated speed rpm : 500
TORQUE CONTROL	+	Del. quantity
5	1050	cm3/1000 strokes : 111.0
Rated speed rpm	: 1050	Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm	. 650	Check tolerance
rated speed this	. 020	cm3/1000s. : +- 4.0
		4.0
ANEROID/ALTITUDE	+	
COMPENSATOR TEST	+	BREAKAWAY
	+	
CETTING	†	Dool Annual in 1 00
SETTING	Ī	Rack travel in mm : -1.00 Rated speed rpm : 1120
Rated speed rpm	: 500	Tolerance 1/min : +- 5
Pressure hPa	: 700	
	+	
MEASUREMENT	+	
B	†	STARTING FUEL DELIVERY
Pressure hPa	500	Rated speed rpm : 100
Rated speed rpm rack travel mm	: -2.60 +	Rated speed rpm : 100 Del. quantity
Tolerance mm	: + 0.10	cm3/1000 strokes : 175.0
. U.C. STICL HAIR	<u> </u>	Tolerance
Rated speed rpm	: 500	cm3/1000 strokes : $+-$ 15.0
	+	Check tolerance
Pressure hPa	: 360 +	cm3/1000s. : +- 19.0
rack travel mm	: -1.90	
Tolerance mm	: + 0.10	
Pressure hPa	: 420	
rack travel mm	-0.75	LOW IDLE
Tolerance mm	: + 0.05	
	+	Rated speed rpm : 275
A	+	rack travel mm : -7.50
START CUT-OUT	+	Tolerance mm : + 0.20
CIAKI COI COI	}	Dal minutati
	. \ 100	Del. quantity
Rated speed rpm Rated speed rpm	: > 100 : < 195	Del. quantity cm3/1000 strokes : 20.0

Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 13.11.95

Test oil

: ISO 4113

Combination No. : 0 402 076 758

Injection pump

Pump designation : PES6P120A720RS3322

EP type number : 0 412 026 764

Governor

Governer design. : RSV650...1250P8A566

Governer no. : 0 421 833 415

Cust. part No. :

Customer-spec. information

Customer : FNH-GEOTECH

Power KW

: 164.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter:

3.0

80A

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : +-3.60 : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.30

Tolerance

Check

tolerance °NW : +- 0.50

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 10.05

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 131.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 4.0

Spreed Tolerance	†
cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 172.0 tolerance degree : + 4.0
Rated speed rpm : 650	RATED SPEED
Rack travel in mm: 4.40 Tolerance mm: + 0.20	Rated speed rpm : 1330
Del. quantity cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : +- 3.0 Check tolerance	Rated speed rpm : 1293 rack travel mm : 9.05
cm3/1000s. : +- 6.0 Spreed	Rated speed rpm : 1325
Tolerance cm3/1000 strokes : 8.0 Check tolerance	+ Tolerance 1/min : + 5 + rack travel mm : 4.00
cm3/1000s. : 12.0	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1500
(B) SETTING OF INJECTION PUMP ₩ITH GOVERNOR	Rated speed rpm : 1294 rack travel mm : 9.05
GUIDE SLEEVE POSITION	Rated speed rpm : 1326 Tolerance 1/min : + 5 rack travel mm : 4.00
Rated speed rpm : 800 Rack travel in mm : 0.50 Tolerance mm : +- 0.20	rack travel mm : 0.85 Tolerance mm : + 0.55
governor spring	Rated speed rpm : 1295 rack travel mm : 9.05
pre-tension click setting x : 1.75	Rated speed rpm : 1327 Tolerance 1/min : + 5 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1250	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
Aneroid pressure hPa : 1000	Rated speed rpm : 1296 rack travel mm : 9.05
Del. quantity cm3/1000 strokes : 131.0 Tolerance	+ Rated speed rpm : 1328
cm3/1000 strokes : +- 1.0 Check tolerance	Tolerance 1/min : + 5 + rack travel mm : 4.00
cm3/1000s. : +- 4.0 Spreed Tolerance	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000 strokes : 5.0 Check tolerance	+ Rated speed rpm : 1297
cm3/1000s. : 9.0	rack travel mm : 9.05
	+ Rated speed rpm : 1329 + Tolerance 1/min : +- 5

rack travel mm	: 4.00 +	
rack travel mm Tolerance mm	: 0.85 : + 0.55	ANEROID/ALTITUDE COMPENSATOR TEST
	: 1298 : 9.05	SETTING
Tolerance 1/min rack travel mm	: 1330 : + 5 : 4.00	Rated speed rpm : 500 Pressure hPa : 1000 rack travel mm : 10.60 Tolerance mm : +- 0.10
rack travel mm Tolerance mm	: 0.85 : + 0.55	MEASUREMENT
LOW IDLE	+	Pressure hPa : - Rated speed rpm : 500 rack travel mm : 7.60 Tolerance mm : + 0.10
control lever position degree tolerance degree	: + 4.0	Rated speed rpm : 500 Pressure hPa : 560
Setting point w/ou Rated speed rpm	t bumper spring + : 650 +	rack travel mm : 9.80 Tolerance mm : + 0.05
rack travel mm Testing:		START CUT-OUT
Rated speed rpm rack travel mm	: 650 : 4.40	Rated speed rpm : > 100 Check
Tolerance mm rack travel mm	: + 0.10 : 2.00	speed 1/min : > 80
Rated speed rpm	: 770 : + 50	FUEL DELIVERY CHARACTERISTICS Ameroid pressure
TORQUE CONTROL	<u> </u>	hPa : 1000 Rated speed rpm : 900 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 1250 : 10.05 : + 0.05	cm3/1000 strokes : 144.5 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 900 : 10.60 : + 0.10	cm3/1000s. : + 6.0 Aneroid pressure
Rated speed rpm rack travel mm Tolerance mm	: 1160 : 10.35 : + 0.10	<pre>hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 83.0</pre>
Rated speed rpm :	: 700 : 10.60	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance mm :	: +- 0.10 +	cm3/1000s. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 215.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

LOW IDLE

Rated speed rpm 650 4.40 rack travel mm 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s.6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 15,11,95

Test oil

: ISO 4113

Combination No. : 0 402 648 795

Injection pump

Pump designation : PE8P120A320LS7873 EP type number : 0 412 628 880

Governor

Governer design. : RQV300...1050PA1258K

Governer no.

: 0 421 815 490

Cust. part No.

: 04223330KY0165-17

Customer-spec. information

Customer

: KHD : BF8M1015/C

Motor

Power KW

: 400.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C

Tolerance °C

40

2.0

Overflow valve

: 1 417 413 025

Inlet press. ber :

1.5

Tolerance bar

: +-0.1

Overflow quantity

min. L/h

115

Tolerance l/h

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: +-

1.5

Test Lines : 1 680 750 075

Outside diameter :

8.0

x inside diameter:

3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar :+ 1.0

Prestroke mm 4.05

Tolerance mm : +- 0.05

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50

: + 1.50 Tolerance mm

: 1-8-7-2-6 Firing order

: - 5- 4- 3

: 0-45-90-135-180 Phasing

: -225-270-315 : + - 0.30

Tolerance Check

: +- 0.50

tolerance "NW

Start of delivery mark

Tolerance : +- 0.50

Check

: + 0.75tolerance °NW

Barrel no.

: 1

BASIC SETTING

Rated speed rpm

1050

Rack travel in mm:

14,70

Tolerance mm

: +- 0.05

Del. quantity		+ guide sleeve
cm3/1000 strokes	: 360.0	† travel mm : 13.50
		+ Tolerance mm : + 0.50
Tolerance		1 Octor drive like 1 0.30
	: +- 1.0	
cm3/1000 strokes	: + 1.0	
		+ GUIDE SLEEVE POSITION
Check tolerance		+
cm3/1000S.	: +- 4.0	+ Rated speed rpm : 1175
		-
Spreed		→ Rack travel in mm : 13.70
Tolerance		+ Tolerance mm : + 1.50
cm3/1000 strokes	: 6.0	Tocerance than
CHOT FULL STrokes	. 0.0	†
-1		
Check tolerance		+ FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000S.	: 9.0	† ·
		+ Rated speed rpm : 1050
Rated speed rpm	: 300	+ Aneroid pressure
abaam (bu)		+ hPa : 1000
Rack travel in mm	4.80	Del. quantity
		m7/1000 of roles 7/0 0
Tolerance mm	: ← 0.20	- cm3/1000 strokes : 360.0
Del. quantity		+ Tolerance
cm3/1000 strokes	: 23.0	+ cm3/1000 strokes : + 1.0
Tolerance		+ Check tolerance
cm3/1000 strokes	: +- 3.0	+ cm3/1000s. : +- 4.0
Check tolerance		Spreed
cm3/1000s.	: +- 6.0	+ Tolerance
	. +- 0.0	
Spreed		+ cm3/1000 strokes : 6.0
Tolerance		+ Check tolerance
cm3/1000 strokes	: 8.0	+ cm3/1000s. : 9.0
Check tolerance		}
cm3/1000s.	: 12.0	
		+ CONTROL LEVER
(D) CETTANC OF TH	IECTION DUMP	T CONTROL LEVER
(B) SETTING OF IN	JECTION PUMP	T
WITH GOVERNOR		+ control lever
		+ position degree : 119.0
		+ tolerance degree : +- 4.0
GUIDE SLEEVE TRAV	EL.	
		+ RATED SPEED
Rated speed rpm	: 300	+
guide sleeve		rack travel mm : 13.70
	. 1 40	Rated speed rpm : 1085
travel mm	: 1.60	
Tolerance mm	: +- 0.20	† Tolerance 1/min : +- 5
		†
Rated speed rpm	: 1097	+ rack travel mm : 4.00
guide sleeve		+ Rated speed rpm : 1200
travel mm	: 10.07	+ Tolerance 1/min : +- 15
Tolerance mm	: +- 0.15	
roter at the limit	0.12	Track travel mm : 0.50
Catad annual		T FACK FEARER IND : U.JU
Rated speed rpm	. 70/	
musika alaawa	: 796	Tolerance mm : + 0.50
guide sleeve		
travel mm	: 6.87	Tolerance mm : + 0.50
travel mm	: 6.87	Tolerance mm : + 0.50
		Tolerance mm : + 0.50
travel mm Tolerance mm	: 6.87 : +- 0.25	Tolerance mm : +- 0.50 Rated speed rpm : 1350
travel mm Tolerance mm Rated speed rpm	: 6.87	Tolerance mm : + 0.50
travel mm Tolerance mm Rated speed rpm guide sleeve	: 6.87 : + 0.25 : 510	Tolerance mm : +- 0.50 Rated speed rpm : 1350
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 6.87 : +- 0.25 : 510 : 4.02	Tolerance mm : +- 0.50 Rated speed rpm : 1350 LOW IDLE
travel mm Tolerance mm Rated speed rpm guide sleeve	: 6.87 : + 0.25 : 510	Tolerance mm : +- 0.50 Rated speed rpm : 1350 LOW IDLE control lever
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 6.87 : +- 0.25 : 510 : 4.02	Tolerance mm : +- 0.50 Rated speed rpm : 1350 LOW IDLE
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 6.87 : +- 0.25 : 510 : 4.02	Tolerance mm : +- 0.50 Rated speed rpm : 1350 LOW IDLE control lever

Testing:

Rated speed rpm	:	300
rack travel mm	:	4.80
Tolerance mm	: +-	0.10

Rated speed rpm : 200

CRT mm max. : > 6.30

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm	:	1050
rack travel mm	:	14.70
Tolerance mm	: -	- 0.0 5

Rated speed rpm : 800 rack travel mm : 14.00 Tolerance mm : + 0.25

Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : + 0.25

Rated speed rpm : 450 rack travel mm : 11.40 Tolerance mm : +- 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1000
rack travel mm : 14.70
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : Rated speed rpm : 1050
rack travel mm : 8.90
Tolerance mm : +- 0.20

Rated speed rpm : 1050

Pressure hPa : 500 rack travel mm : 11.95 Tolerance mm : + 0.10

Pressure hPa : 800 rack travel mm : 14.10 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 250.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

BREAKAWAY

Rack travel in mm : 13.70
Rated speed rpm : 1085
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : + 0.30
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

LOW IDLE

Rated speed rpm	:		300
rack travel mm	:		4.80
Tolerance mm	:	+	0.20
Del. quantity			
cm3/1000 strokes	:		23.0
Tolerance			
cm3/1000 strokes	:	┿	3.0
Check tolerance			
cm3/1000S.	:	+-	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/1000s.	:		12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 14.11.95 : ISO 4113

Combination No. : 0 402 744 804

Injection pump

Pump designation : PES4P120A320RS7402

EP type number

: 0 412 724 804

Governor

Governer design. : RQV275...1200PA1257K

Governer no.

: D 421 815 494

Cust. part No. : CCEP 5154 66-238

Customer-spec. information

Customer

: RVI

Motor

: MIDR 04-02-26 A4

Power KW

: 100.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 2 417 413 071

Inlet press. bar :

2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 089

Outside diameter :

8.0

x inside diameter:

3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar :+ 1.0

Prestroke mm 5.20

: +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00

Tolerance mm : + 0.50

: 1-3-4-2 Firing order

: 0-90-180-270 Phasing

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance *NW

: ← 0.75

Barrel no.

: 1

1200

BASIC SETTING

Rated speed rpm

Rack travel in mm: 13.10

Tolerance mm : **←** 0.05

Del. quantity

cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes : +- 1.0

A16

Check tolerance cm3/1000s. : ←	4.0	Rated speed rpm : 1450	
Spreed Tolerance cm3/1000 strokes :	5.0	Rack travel in mm : 12.10 Tolerance mm : +- 1.50	
Check tolerance cm3/1000s. :	9.0	FULL LOAD DELIVERY AT FULL LOAD STOP	
Rated speed rpm :	325	Rated speed rpm : 1200 Aneroid pressure hPa : 1200	
Rack travel in mm : Tolerance mm : +-		Del. quantity cm3/1000 strokes : 245.0	
Del. quantity cm3/1000 strokes : Tolerance	28.0	Tolerance cm3/1000 strokes : + 1.0 Check tolerance	
<pre>cm3/1000 strokes : +- Check tolerance</pre>	+	cm3/1000s. : +- 4.0 Spreed	
cm3/1000s. : +-	6.0	Tolerance cm3/1000 strokes : 5.0	
Tolerance cm3/1000 strokes : Check tolerance	8.0	Check tolerance cm3/1000s. : 9.0	
cm3/1000s. :	12.0		
(B) SETTING OF INJECTION WITH GOVERNOR	ON PUMP	control Lever position degree : 298.0 tolerance degree : +- 4.0	
GUIDE SLEEVE TRAVEL	1	RATED SPEED	
Rated speed rpm : guide sleeve	+	rack travel mm : -1.00	
travel mm : Tolerance mm : +-	1.52 0.20	Rated speed rpm : 1260 Tolerance 1/min : +- 5	
guide steeve travel mm :	1260 +	rack travel mm : -9.10 Rated speed rpm : 1410 Tolerance 1/min : + 15	
Tolerance mm : +- Rated speed rpm :	0.15 938	rack travel mm : -12.60 Tolerance mm : +- 0.50	
guide steeve travel mm :	6.86	Rated speed rpm : 1500	
	0.25		
Rated speed rpm : guide sleeve	550	LOW IDLE	
	3.92 0.25 1650	control lever position degree : 252.0 tolerance degree : + 4.0	
guide sleeve	13.50	Testing:	
	0.50	Rated speed rpm : 325 rack travel mm : -8.40	
GUIDE SLEEVE POSITION	Į	Tolerance mm : + 0.10	

		+
Rated speed rpm	: 225	Aneroid pressure
CRT mm min.	: < 6.90	+ hPa : 1200 + Rated speed rpm : 850
CAT THEN CITET.	. \ 0.90	+ Del. quantity
Rated speed rpm	: 390	+ cm3/1000 strokes : 235.0
		+ Tolerance + cm3/1000 strokes : +- 3.0
TORQUE CONTROL		Check tolerance
r		+ cm3/1000S. : +- 6.0
Rated speed rpm	: 1200	Anonoid apaccura
Rated speed rpm	: 850	Aneroid pressure hPa : - Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 183.0 Tolerance cm3/1000 strokes : + 1.0
rack travel mm	: -1.05	+ Rated speed rpm : 1200
Tolerance mm	: ← 0.10	† Del. quantity
Rated speed rpm	• 700	+ cm3/1000 strokes : 183.0 + Tolerance
rack travel mm Tolerance mm	: -1.85	cm3/1000 strokes : +- 1.0
Tolerance mm	: +- 0.20	+ Check tolerance
		+ cm3/1000s. : +- 4.0
ANEROID/ALTITUDE		<u> </u>
COMPENSATOR TEST		BREAKAWAY
		†
SETTING		Rack travel in mm : -1.00
02/12/10		Rated speed rpm : 1260
Rated speed rpm		Tolerance 1/min : + 5
Pressure hPa	: 1200	†
MEASUREMENT		
		STARTING FUEL DELIVERY
Pressure hPa	1200	Potest aread pure 4 100
Rated speed rpm rack travel mm		+ Rated speed rpm : 100 + Del. quantity
Tolerance mm		+ cm3/1000 strokes : 110.0
	4	Tolerance
Rated speed rpm	: 1200	+ cm3/1000 strokes ; + 15.0
Pressure hPa	: 200	+ Check tolerance + cm3/1000s. : +- 19.0
rack travel mm	-2.00	+
Tolerance mm	: +- 0.20	+
Pressure hPa	: 440	İ
rack travel mm	: -0.70	LOW IDLE
Tolerance mm	: ← 0.05	}
		Rated speed rpm : 325
START CUT-OUT		Tolerance mm : -8.40
UTAKE 601 '001		Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 28.0
Rated speed rpm	: < 275	Tolerance
Check		+ cm3/1000 strokes : +- 2.0 + Check tolerance
speed 1/min	: > 110	- cm3/1000s. : + 6.0
Check		Spreed
speed 1/min	: < 285	Tolerance
		+ cm3/1000 strokes : 8.0
FUEL DELIVERY CHA	RACTERISTICS	
· AFF AFFRENCE ON		1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15,11,95 Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump

Pump designation : PES6P120A320RS7359 EP type number : 0 412 726 925

Governor

Governer design. : RQ300/1050PA999-7 Governer no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer-spec. information

Customer : RVI

: MIHRO62045 A41 Motor

Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : \leftarrow 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0 x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

4.70 Prestroke mm Tolerance mm : +- 0.05

Check

tolerance mm : + - 0.10

Rack travel in mm: 20.25 Tolerance mm : + 0.75

Firing order

: 1-5-3-6-2-: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : + - 0.50

Start of delivery mark

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 600

12,30 Rack travel in mm : Tolerance mm : +- 0.05

: +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 191.0

Tolerance cm3/1000 strokes : +- Check tolerance cm3/1000s. : +-	4.0	Rated speed rpm : 1380 guide sleeve travel mm : 11.50 Tolerance mm : +- 0.50
Spreed Tolerance cm3/1000 strokes :	5.0	GUIDE SLEEVE POSITION Rated speed rpm : 800
Check tolerance cm3/1000s. :	9.0	Rack travel in mm : 20.00 Tolerance mm : +- 0.80
Rated speed rpm :	275	
Rack travel in mm : Tolerance mm : +- Del. quantity	-6.10 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 600
cm3/1000 strokes : Tolerance	34.0	Aneroid pressure hPa : 1000
cm3/1000 strokes : +- Check tolerance	2.0	Del. quantity cm3/1000 strokes : 191.0
cm3/1000s. : +- Spreed	5.0	Tolerance cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes : Check tolerance	8.0	Check tolerance cm3/1000s. : +- 4.0 Spreed
cm3/1000s. :	12.0	Tolerance cm3/1000 strokes : 5.0
(B) SETTING OF INJECTIO WITH GOVERNOR	N PUMP	Check tolerance cm3/1000s. : 9.0
GUIDE SLEEVE TRAVEL		CONTROL LEVER
guide sleeve travel mm : Tolerance mm : +-	1.75 0.20	control lever position degree : 276.0 tolerance degree : + 4.0 RATED SPEED
Rated speed rpm : 1 guide sleeve travel mm :	6.55	rack travel mm : -1.00 Rated speed rpm : 1138
	0.15	Tolerance 1/min : + 5
guide sleeve travel mm :	6.00	rack travel mm : -8.30 Rated speed rpm : 1265 Tolerance 1/min : +- 15
	594	rack travel mm : -11.80 Tolerance mm : +- 0.50
guide sleeve travel mm : Tolerance mm : +-	5.11 +	Rated speed rpm : 1375
Rated speed rpm : 7	720	LOW IDLE
travel mm : +	6.00	

	,	
control lever position degree tolerance degree	: 255.0 : + 4.0	Check speed 1/min : > 80 Check speed 1/min : < 215
Testing:	1	
Rated speed rpm rack travel mm Tolerance mm	: -6.10 }	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1000
rack travel mm Rated speed rpm Tolerance 1/min	: -10.30 : 520 : +- 20	Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 198.0
Rated speed rpm	: 175	Tolerance cm3/1000 strokes : +- 3.0 Check tolerance
CRT mm min.	: > -4.20	cm3/1000s. : +- 6.0
TORQUE CONTROL		Aneroid pressure hPa : - Rated speed rpm : 500
Rated speed rpm Tolerance mm	: 600 : + 0.05	Del. quantity cm3/1000 strokes : 156.0 Tolerance
Rated speed rpm Tolerance mm	: 1050 : +- 0.10	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
ANEROID/ALTITUDE		
COMPENSATOR TEST	‡	BREAKAWAY
SETTING	‡ †	Rack travel in mm: -1.00 Rated speed rpm : 1138
Rated speed rpm Pressure hPa	: 500 : 1000	Tolerance 1/min : +- 5
MEASUREMENT	+	STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : -1.10 : + 0.20	Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 155.0 Tolerance
Rated speed rpm	: 500	cm3/1000 strokes : +- 15.0 Check tolerance
Pressure hPa rack travel mm Tolerance mm	: 140 : -0.65 : + 0.15	cm3/1000s. : + 19.0
Pressure hPa rack travel mm Tolerance mm	: 200 : -0.25 : + 0.05	LOW IDLE Rated speed rpm : 275
START CUT-OUT	100	rack travel mm : -6.10 Tolerance mm : + 0.20 Del. quantity
Rated speed rpm Rated speed rpm	: > 100 + : < 195 +	cm3/1000 strokes : 34.0

Tolerance		
cm3/1000 strokes	: +	2.0
Check tolerance		
cm3/1000s.	: +-	5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 15.11.95 : ISO 4113

Combination No. : 0 402 746 953

Injection pump

Pump designation : PES6P120A320RS7294

EP type number : 0 412 726 895

Governor

Governer design. : RQV275...1000PA1001

: -1

Governer no.

: 0 421 813 936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information

Customer

: RVI

Motor

: MIDR 063540 J/3

Power KW

: 306.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 071

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: + 1.5

Test lines

: 1 680 750 089

Outside diameter : 8.0

x inside diameter:

3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm 4.55 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

: +- 0.50 tolerance °NW

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance "NW : + - 0.70

: 1 Barrel no.

BASIC SETTING

Rated speed rpm :

600

Rack travel in mm : 13.80

Tolerance mm : + 0.05

		Rated speed rpm : 393	
Del. quantity	+	guide sleeve	
cm3/1000 strokes :	312.0	travel mm : 2.99	
Tolerance	<u> </u>	Tolerance mm : + 0.20	
cm3/1000 strokes : +-	1.0 I	Rated speed rpm : 490	
UNION 1 000 DU1 01(00 1	1	guide sleeve	
Check tolerance	+	travel mm : 3.81	
cm3/1000s. : +-	4.0	Tolerance mm : +- 0.20	
Spreed	 †	Rated speed rpm : 1370	
Tolerance	I	Rated speed rpm : 1370 guide sleeve	
cm3/1000 strokes :	5.0	travel mm : 11.50	
	+	Tolerance mm : +- 0.50	
Check tolerance	+		
cm3/1000s. :	9.0	OUTDE OF FELE BOOTTON	
Rated speed rpm :	300 ‡	GUIDE SLEEVE POSITION	
Nated speed (pill .	1	Rated speed rpm : 1185	
	-8.60 +	The second secon	
	0.20	Rack travel in mm : 12.60	
Del. quantity	+	Tolerance mm : +- 1.30	
cm3/1000 strokes : Tolerance	31.0		
cm3/1000 strokes : +-	2.0	FULL LOAD DELIVERY AT FULL LOAD S	TOP
Check tolerance	1	TOLL LOND DELIVERY AT TOLL LOND O	101
cm3/1000s. : +-	6.0	Rated speed rpm : 600	
Spreed	+	Aneroid pressure	
Tolerance	,	hPa : 1000	
cm3/1000 strokes :	8.0	Del. quantity	
Check tolerance cm3/1000s. :	12.0	cm3/1000 strokes : 312.0 Tolerance	
CIII 7 (0005	I	cm3/1000 strokes : +- 1.0	
	1	Check tolerance	
(B) SETTING OF INJECTION	N PUMP +	cm3/1000s. : + 4.0	
WITH GOVERNOR	+	Spreed	
	+	Tolerance	
CUTOE OF PRIFE TOANIES		cm3/1000 strokes : 5.0	
GUIDE SLEEVE TRAVEL	Ī	Check tolerance cm3/1000s. : 9.0	
Rated speed rpm :	275 I	(11137 10003. , 9.0	
guide sleeve	1		
travel mm :	1.29		
Tolerance mm : +-	0.10 +	CONTROL LEVER	
Batad award was a 11	no.	anning Lauren	
Rated speed rpm : 10 guide sleeve	D86 ±	control lever position degree : 302.0	
travel mm :	8.46	tolerance degree : +- 4.0	
	0.10	1000. 4.100 409. 60 1	
	+	RATED SPEED	
•	773 +		
guide sleeve	1 100	rack travel mm : -1.00	
travel mm :	6.09	Rated speed rpm : 1080 Tolerance 1/min : + 5	
Tolerance mm : +	I	rocerance man J	
Rated speed rpm : 3	343	rack travel mm : -9.70	
guide sleeve	+	Rated speed rpm : 1220	
travel mm :	2.33	Tolerance 1/min : + 15	
Tolerance mm : +-	0.20	mode through	
	+	rack travel mm : -13.25	

Tolerance mm Rated speed rpm		rack travel mm : -0.95 Tolerance mm : +- 0.05
LOW IDLE		START CUT-OUT
LOW IDEC		Rated speed rpm : > 100 Rated speed rpm : < 225
control lever position degree tolerance degree		Check speed 1/min : > 80 Check
Testing:		+ speed 1/min : < 245
Rated speed rpm rack travel mm Tolerance mm	: -8.60	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	+ Aneroid pressure + hPa : 1000 + Rated speed rpm : 1000
CRT mm max.	: < -7.20	Del. quantity cm3/1000 strokes : 289.0
Rated speed rpm	: 370	+ cm3/1000 strokes : 289.0 + Tolerance + cm3/1000 strokes : +- 3.0
		Check tolerance
TORQUE CONTROL		+ cm3/1000s. : +- 6.0
Rated speed rpm	: 600	Aneroid pressure
Rated speed rpm Tolerance mm		Rated speed rpm : 500 Del. quantity
Rated speed rpm rack travel mm	: -5.50	- cm3/1000 strokes : 138.0 - Tolerance - cm3/1000 strokes : +- 5.0
Tolerance mm	: → 0.10	+ Check tolerance + cm3/1000s. : +- 8.0
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		cm3/1000s. : 12.0
Rated speed rpm Pressure hPa	: 500 : 1000	Aneroid pressure hPa : - Rated speed rpm : 500
MEASUREMENT		+ Del. quantity + cm3/1000 strokes : 152.0 + Tolerance
Pressure hPa Rated speed rpm	: - : 500	cm3/1000 strokes : +- 1.0
rack travel mm Tolerance mm	: -5.00 : + 0.20	cm3/1000s. : +- 4.0
Rated speed rpm	: 500	BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 240 : -3.80 : +- 0.20	Rack travel in mm: -1.00 Rated speed rpm: 1080
Pressure hPa	: 600	+ Tolerance 1/min : +- 5 +

STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm 300 rack travel mm -8.60 Tolerance mm : +- 0.20 Del. quantity 31.0 cm3/1000 strokes Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.11.95 Test oil : ISO 4113

Combination No. : 0 402 996 307

Injection pump

Pump designation : PES6P120A720RS8512

: -2

EP type number : 0 412 926 212

Governor

Governer design. : RE30

Governer no. : 0 421 890 024

Cust. part No. : CCEP 5156 66-242

Customer-spec. information

Customer : RVI

Motor : 062465A42B42C42

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0
Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.20

Check

tolerance mm : + 0.10

Check

tolerance mm : + 0.10

Rack travel in mm : 12.00

Rack travel in mm : 12.00 Tolerance mm : + 0.20

Tolerance mm : +- 0.20

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance $^{\circ}NW$: \leftarrow 0.50

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING ENGINE-SPEED SENSOR Warm-up time: 3 minutes at (All P and R pumps not n=600 min-1, Uact = 2.5 VH and M pumps) Test with control rod TESTING & SETTING RACK TRAVEL SENSOR in stop position POSITION Engine speed min-1: 60 Amplitude V Engine speed min-1: 1.4 Tolerance V : +/- 0.6 Setting point Check (P, R and H pump) tolerance V : +/- 1.20 Uact V 3.100 Engine speed min-1: 600 Difference CRT mm 13.00 Amplitude to Tolerance mm : +/- 0.05 Amplitude V Check : max.1.4 : +/- 0.10 tolerance mm Check value (C) INJECTION PUMP WITH POSITIONER (P, R and H pump) TEST POINT V1 Uact V 1.700 ; 900 CRT mm 6.15 Rated speed rpm 3.050 Tolerance mm : +/- 0.25 Uact V Check Del. quantity : +/- 0.30cm3/1000 strokes : 310.0 tolerance mm Tolerance cm3/1000 strokes : +-1.0 Setting point Check tolerance 5.0 cm3/1000s. (amua M) Spreed Uact V 3.100 Tolerance cm3/1000 strokes : 12.50 CRT mm 8.0 Check tolerance Tolerance mm : +/- 0.05 cm3/1000s. 14.0 Check tolerance mm : +/- 0.10 FUEL DELIVERY CHARACTERISTICS Check value (m pump) Rated speed rpm Uact V 3.260 1.700 Del. quantity Uact V cm3/1000 strokes : 5.50 392.0 CRT mm Tolerance Tolerance mm : +/- 0.25 cm3/1000 strokes : + 10.0Check Check tolerance : +/- 0.30 tolerance mm cm3/1000s. : + 12.0Stop position Spreed Tolerance : Value with cm3/1000 strokes : 16.0 Uact V deenergised adjusting magnet Check tolerance cm3/1000s. and control rod in 18.0 stop position. CRT mm 0.75 TEST POINT L1 : +/- 0.25 Tolerance mm Check Rated speed rpm 325 Uact V 1.310 : +/- 0.35 tolerance mm

Tolerance Volt : + 0.060
Check tolerance
Volt : + 0.070
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : + 3.0
Spreed
Tolerance
cm3/1000 strokes : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm 100 Uact V 4.700 Del. quantity cm3/1000 strokes : 195.0 Tolerance cm3/1000 strokes : +- 19.0 Check tolerance cm3/1000s. : + 22.0Spreed Tolerance 40.0 cm3/1000 strokes : Check tolerance cm3/1000s. 50.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 09.11.95 : ISO 4113

Combination No. : 0 403 246 054

Injection pump

Pump designation : PES6MW100/720RS1526

EP type number : 0 413 206 025

Governor

Governer design. : RQV300...1300MW154

Cust. part No. : 0260748702

Customer-spec. information : MB-NFZ Customer

Motor

: 0M366LA

Power KW

: 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 1 419 992 198

Inlet press. bar :

1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 089

Outside diameter :

8.0

x inside diameter : 3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm 4.55

: + 0.05Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 20.00

Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance °NW : + - 0.75

BASIC SETTING

Rated speed rpm 1300

Rack travel in mm : 11.90

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 98.0

Tolerance

cm3/1000 strokes 1.0 : +--

Check tolerance

cm3/1000s.

3.0 : +-

Spreed

Tolerance

cm3/1000 strokes :

3.5

	+ Rated speed rpm : 1445
Check tolerance cm3/1000s. : 6.0	+ Rack travel in mm : 10.00
Rated speed rpm : 300	Tolerance mm : + 2.70
Rack travel in mm : 4.00 Tolerance mm : +- 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 12.0	Rated speed rpm : 1300 Aneroid pressure
Tolerance cm3/1000 strokes : +- 2.0	+ hPa : 1000 + Del. quantity
Check tolerance cm3/1000s. : +- 4.5	cm3/1000 strokes : 98.0 Tolerance
Spreed Tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	+ cm3/1000s. : +- 3.0 Spreed
cm3/1000s. : 5.5	+ Tolerance + cm3/1000 strokes : 3.5 + Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : 6.0
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Rated speed rpm : 300 guide sleeve	control lever position degree : 114.0
travel mm : 1.01 Tolerance mm : + 0.20	tolerance degree : +- 4.0
Rated speed rpm : 1352	+ RATED SPEED
guide sleeve travel mm : 6.10	rack travel mm : 10.90 Rated speed rpm : 1345
Tolerance mm : + 0.15 Rated speed rpm : 1140	+ Tolerance 1/min : +- 5 + rack travel mm : 4.00
guide sleeve travel mm : 4.84	Rated speed rpm : 1500 Tolerance 1/min : + 15
Tolerance mm : + 0.25	rack travel mm : 0.50
Rated speed rpm : 740 guide sleeve	Tolerance mm : + 0.50 + Rated speed rpm : 1600
travel mm : 3.23 Tolerance mm : + 0.25	+
Rated speed rpm : 1800 guide sleeve	LOW IDLE
travel mm : 12.00 Tolerance mm : +- 0.25	control lever
Rated speed rpm : 1910	position degree : 73.0 tolerance degree : + 4.0
guide sleeve travel mm : 13.50	Testing:
Tolerance mm : + 0.50 GUIDE SLEEVE POSITION	Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.10
	+

Rated speed rpm	: 200	+ Del. quantity
00T	. > 7.50	+ cm3/1000 strokes : 96.0
CRT mm min.	: > 4.50	+ Tolerance + cm3/1000 strokes : +- 1.5
		Check tolerance
TORQUE CONTROL		+ cm3/1000s. : +- 4.0
		+ Spreed
Rated speed rpm	: 1300	+ Tolerance
rack travel mm	11.90	+ cm3/1000 strokes : 5.0
Tolerance mm	: +- 0.05	+ Check tolerance + cm3/1000s. : 7.0
Rated speed rom	: 750	T CIII 7 10003: 1 7.0
Rated speed rpm rack travel mm	: 11.90	Aneroid pressure
Tolerance mm		+ hPa : -
		Rated speed rpm : 500
ANICOOTO (A) TITUOC		Del. quantity + cm3/1000 strokes : 61.0
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance
COM ENDATOR TEST		+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
SETTING		+ cm3/1000s. : +- 3.0
	~~~	+
Rated speed rpm		DDCAKALIAN
Pressure hPa rack travel mm		+ BREAKAWAY
Tolerance mm		Ţ
		Rack travel in mm: 10.90
MEASUREMENT		Rated speed rpm : 1345
		† Tolerance 1/min : +- 5
Pressure hPa	: -	±
Contract and an artist areas		<b>\$</b>
Rated speed rpm		<u> </u>
Rated speed rpm Tolerance mm		STARTING FUEL DELIVERY
Tolerance mm	: <b>←</b> 0.10	STARTING FUEL DELIVERY
Tolerance mm Rated speed rpm	: ← 0.10 : 500	Rated speed rpm : 100
Tolerance mm  Rated speed rpm  Pressure hPa	: ← 0.10 : 500 : 350	Rated speed rpm : 100 Del. quantity
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm	: ← 0.10 : 500 : 350 : 1.30	Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 125.0
Tolerance mm  Rated speed rpm  Pressure hPa	: ← 0.10 : 500 : 350	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance
Tolerance mm Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: ← 0.10 : 500 : 350 : 1.30 : ← 0.10	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : +- 5.0
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance
Tolerance mm Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: ← 0.10 : 500 : 350 : 1.30 : ← 0.10	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : +- 5.0
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm  Tolerance mm  Pressure hPa rack travel mm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm  Tolerance mm  Pressure hPa rack travel mm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : +- 5.0 Check tolerance cm3/1000s. : +- 8.0
Tolerance mm Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance  cm3/1000s. : + 8.0
Tolerance mm Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm START CUT-OUT Rated speed rpm Rated speed rpm	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10 : > 100 : < 220	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.20
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : 4.00 Del. quantity
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min Check	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10 : > 100 : < 220 : > 80	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10 : > 100 : < 220	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0 Tolerance
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min Check	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10 : > 100 : < 220 : > 80	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0 Tolerance
Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm  START CUT-OUT  Rated speed rpm Rated speed rpm Check speed 1/min Check	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10  : > 100 : < 220 : > 80 : < 240	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance  cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300  rack travel mm : 4.00  Tolerance mm : + 0.20  Del. quantity  cm3/1000 strokes : 12.0  Tolerance  cm3/1000 strokes : + 2.0  Check tolerance  cm3/1000s. : + 4.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min Check speed 1/min FUEL DELIVERY CHA	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10  : > 100 : < 220 : > 80 : < 240	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance  cm3/1000s. : + 8.0   LOW IDLE  Rated speed rpm : 300  rack travel mm : 4.00  Tolerance mm : + 0.20  Del. quantity  cm3/1000 strokes : 12.0  Tolerance  cm3/1000 strokes : + 2.0  Check tolerance  cm3/1000s. : + 4.5  Spreed
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min Check speed 1/min FUEL DELIVERY CHA Aneroid pressure	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10  : > 100 : < 220  : > 80 : < 240  RACTERISTICS	Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 125.0  Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0  LOW IDLE  Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Pressure hPa rack travel mm Tolerance mm  START CUT-OUT Rated speed rpm Rated speed rpm Check speed 1/min Check speed 1/min FUEL DELIVERY CHA	: + 0.10 : 500 : 350 : 1.30 : + 0.10 : 250 : 0.65 : + 0.10  : > 100 : < 220 : > 80 : < 240	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 125.0  Tolerance  cm3/1000 strokes : + 5.0  Check tolerance  cm3/1000s. : + 8.0   LOW IDLE  Rated speed rpm : 300  rack travel mm : 4.00  Tolerance mm : + 0.20  Del. quantity  cm3/1000 strokes : 12.0  Tolerance  cm3/1000 strokes : + 2.0  Check tolerance  cm3/1000s. : + 4.5  Spreed

cm3/1000s.	:	5.5	

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 30.05.95 Test oil : ISO 4113

Combination No. : 0 402 646 602

Injection pump

Pump designation : PE6P120A720RS7264

EP type number : G 412 626 874

Governor

Governer design. : RQ750PA758-14 Governer no. : 0 421 801 659

Cust. part No. : 1337552

Customer-spec. information Customer : SCANIA : D 11

Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : : +- 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

251.5 : +- 1.5 Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 : +- 1.50 Tolerance nm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

: +- 0.50 tolerance °NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

14.15 Rack travel in mm :

Tolerance nm:  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 276.0

Tolerance cm3/1000 strokes : +- 1.0	control lever position degree : 90.0
Check tolerance cm3/1000s. : +- 4.0	tolerance degree : +- 4.0
Spreed	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : 8.0	Rated speed rpm : 750 rack travel mm : 13.10
Check tolerance cm3/1000s. : 12.0	Rated speed rpm : 794 Tolerance 1/min : +- 4 rack travel mm : 4.00
Rack travel in mm: 5.50	+
Tolerance mm : + 0.10	+ rack travel mm : 0.50
Del. quantity cm3/1000 strokes : 30.0	+ Tolerance mm : + 0.50 + Rated speed rpm : 850
Tolerance	+ Rated speed rpm : 850
cm3/1000 strokes : +- 4.0	Rated speed rpm : 751
Check tolerance	+ rack travel mm : 13.10
cm3/1000s. : + 6.0	Total and all and a 705
Spreed Tolerance	Rated speed rpm : 795 Tolerance 1/min : + 4
cm3/1000 strokes : 5.0	rack travel mm : 4.00
Check tolerance	T rack cravet min . Tagg
cm3/1000s. : 9.0	rack travel mm : 0.50
	+ Tolerance mm : + 0.50
	Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	+ Rated speed rpm : 752
	rack travel mm : 13.10
	Rated speed rpm : 796
FULL LOAD DELIVERY AT FULL LOAD	
TOLL LOND DELIVERY AT TOLL LOND	+ rack travel mm : 4.00
Rated speed rpm : 700	1
Aneroid pressure	+ rack travel mm : 0.50
hPa : -	+ Tolerance mm : + 0.50
Del. quantity	+ Rated speed rpm : 850
cm3/1000 strokes : 276.0	†
Tolerance	+ Rated speed rpm : 753
cm3/1000 strokes : + 1.0	† rack travel mm : 13.10
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 797
Spreed . +- 4.5	Tolerance 1/min : +- 4
Tolerance	+ rack travel mm : 4.00
cm3/1000 strokes : 8.0	1
Check tolerance	rack travel mm : 0.50
cm3/1000s. : 12.0	+ Tolerance mm : + 0.50
	+ Rated speed rpm : 850
	†
AANTRAL LENED	Rated speed rpm : 754
CONTROL LEVER	rack travel mm : 13.10
control lever	Rated speed rpm : 798
position degree : 29.0	+ Tolerance 1/min : +- 4
tolerance degree : +- 4.0	rack travel mm : 4.00
The second secon	+
	† rack travel mm : 0.50

Tolerance mm	: + 0.50
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 13.10
Rated speed rpm	: 799
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 850

### TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 14.15 Tolerance mm : + 0.05

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.15
Tolerance mm : +- 0.05

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 500
rack travel mm : 11.00
Tolerance mm : + 0.20

Rated speed rpm : 500

Pressure hPa : 210 rack travel mm : 11.90 Tolerance mm : + 0.20

Pressure hPa : 440 rack travel mm : 13.45 Tolerance mm : + 0.05

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : +- 4.0

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.10.95 : ISO 4113

Combination No. : 0 402 646 665

Injection pump

Pump designation : PE6P130A720RS7354 EP type number : 0 412 636 835

Governor

Governer design. : RQV300...950PA1002

: -3K

Governer no.

: 0 421 815 491

Cust. part No. :

Customer-spec. information

Customer

: IVECO-FRANCE

Motor

: 8210.42K.3000

TEST BENCH REQUIREMENTS

Inlet line

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve

: 2 417 413 076

Inlet press. bar :

Tolerance bar

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 075

Outside diameter : 8.0

B10

x inside diameter: 3.0

x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm

5.05

Tolerance mm

: + - 0.05

Check

tolerance mm : + - 0.10

Rack travel in mm : 12.00 Tolerance mm

: + 0.50

Firing order

: 1-- 5- 3- 6- 2-

Phasing

: 0-60-120-180-240

: -300

Tolerance Check

tolerance °NW

: +- 0.50

: + 0.30

Start of delivery mark

Check

tolerance "NW : + 0.40

Barrel no.

1

BASIC SETTING

Rated speed rpm

950

Rack travel in mm:

12.05

Tolerance mm

: +- 0.05

Del. quantity

cm3/1000 strokes :

244.0

Tolerance

cm3/1000 strokes : + 1.0

	<u>.</u>	+
Check tolerance cm3/1000s.	: +- 4.0	GUIDE SLEEVE POSITION
Spreed Tolerance		Rated speed rpm : 1200
cm3/1000 strokes	: 5.0	Rack travel in mm : 11.00 Tolerance mm : +- 2.70
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELTHERY AT SULL LOAD CTOD
Rated speed rpm	: 300	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950
Rack travel in mm	1: 4.80	Aneroid pressure
Tolerance mm Del. quantity		hPa : 900 Del. quantity
cm3/1000 strokes Tolerance	: 22.0	cm3/1000 strokes : 244.0 Tolerance
cm3/1000 strokes Check tolerance	: +- 3.0	cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000s. Spreed	: +- 6.0	cm3/1000s. : +- 4.0 Spreed
Tolerance cm3/1000 strokes	: 8.0	Tolerance : 5.0
Check tolerance	40.0	Check tolerance
cm3/1000s.	: 12.0	- cm3/1000s. : 9.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER
GUIDE SLEEVE TRAV	EL	control lever position degree : 114.0
Rated speed rpm	: 300	position degree : 114.0 tolerance degree : + 4.0
Rated speed rpm guide sleeve	-	position degree : 114.0
Rated speed rpm	: 300	position degree : 114.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.00
Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 11.00 Rated speed rpm : 1015
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 300 : 1.64 : + 0.20 : 1025	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764 : 6.22	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764 : 6.22 : + 0.25	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764 : 6.22 : + 0.25 : 500 : 3.78	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1250  LOW IDLE  control lever
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764 : 6.22 : + 0.25 : 500 : 3.78 : + 0.25 : 1330 : 13.50	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1250  LOW IDLE
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.64 : + 0.20 : 1025 : 9.00 : + 0.15 : 764 : 6.22 : + 0.25 : 500 : 3.78 : + 0.25 : 1330	position degree : 114.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.00 Rated speed rpm : 1015 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1015 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Rated speed rpm : 1250  LOW IDLE  control lever position degree : 71.0

Rated speed rpm	: 300	+
rack travel mm Tolerance mm	: 4.80	Rated speed rpm : > 180
Tolerance mm	: + 0.10	+ Rated speed rpm : < 220
Datad award ann	: 200	† Charle
Rated speed rpm	: 200	+ Check + speed 1/min : > 200
CRT mm min.	: > 6.30	+ speed 1/min : > 200 + Check
City i mile desire.	. > 0.50	speed 1/min : < 240
Rated speed rpm	: 355	J Speed William
TORGUE CONTROL		+
	255	+ Aneroid pressure
Rated speed rpm	: 950	+ hPa : 900
rack travel mm Tolerance mm	12.05	Rated speed rpm : 550
ioterance mm	; +- 0.05	+ Del. quantity + cm3/1000 strokes : 264.0
Rated speed rpm	• 700	Tolerance
rack travel mm	11.85	cm3/1000 strokes : +- 3.0
rack travel mm Tolerance mm	: ← 0.10	Check tolerance
		+  cm3/1000s. : + 6.0
Rated speed rpm		<del>}</del>
rack travel mm		+ Aneroid pressure
Tolerance mm	: <b>←</b> 0.10	+ hPa :
0-411	. 700	+ Rated speed rpm : 550
Rated speed rpm rack travel mm	: 300 : 10.90	<pre>+ Del. quantity + cm3/1000 strokes : 174.0</pre>
Tolerance mm	: + 0.30	Tolerance
ioterance mm		cm3/1000 strokes : + 1.0
<del></del>		Check tolerance
ANEROID/ALTITUDE		+ cm3/1000s. : +- 4.0
COMPENSATOR TEST		+
		BREAKAWAY
SETTING		†
Datad aroad arm	: 950	Rack travel in mm: 11.00
Rated speed rpm Pressure hPa		+ Rated speed rpm : 1015
rack travel mm		Tolerance 1/min : + 5
Tolerance mm	: +- 0.05	
		<del>}</del>
MEASUREMENT		
		+ STARTING FUEL DELIVERY
Pressure hPa		100
Rated speed rpm		+ Rated speed rpm : 100 + rack travel mm : 20.25
rack travel mm Tolerance mm	: 8.50 : +- 0.20	+ rack travel mm : 20.25 + Tolerance mm : +- 0.75
toter after this	0.20	Del. quantity
Rated speed rpm	: 950	+ cm3/1000 strokes : 150.0
	. , , , ,	+ Tolerance
Pressure hPa	: 290	+ cm3/1000 strokes : +- 15.0
rack travel mm	9.35	+ Check tolerance
Tolerance mm	: ← 0.20	+ cm3/1000s. : +- 19.0
	F00	†
Pressure hPa	: 500	†
rack travel mm Tolerance mm	: 11.10 : + 0.05	Ī
TOCETATIVE WITH	0.03	LOW IDLE
	<del></del>	
START CUT-OUT		Rated speed rpm : 300

rack travel mm Tolerance mm	: : +-	4.80 0.20
Del. quantity cm3/1000 strokes Tolerance	•	22.0
cm3/1000 strokes	; +-	3.0
Check tolerance cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.12.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 648 602

Injection pump

Pump designation : PE8P110A32ORS7398 EP type number : 0 412 618 800

Governor

Governer design. : RQV300...900PA1252K

Governer no. : 0 421 815 484

Cust. part No. :

Customer-spec. information Customer : TATRA

: T3B-928.60 Motor

Power KW : 255.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0 x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.05

: +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 13.00 Tolerance mm : +- 1.00

Firing order : 1-8-5-4-7

: - 2- 3- 6

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.00

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 191.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 4.0

	+
Spreed	Rack travel in mm: 13.00
Tolerance	+ Tolerance mm : + 1.50
cm3/1000 strokes : 5.0	<b>↓</b>
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	<del>}</del>
	+ Rated speed rpm : 900
Rated speed rpm : 250	Aneroid pressure
	+ hPa : 1500
Rack travel in mm : 5.20	+ Del. quantity
Tolerance mm : ← 0.30	+ cm3/1000 strokes : 191.0
Del. quantity	† Tolerance
cm3/1000 strokes : 17.0	+ cm3/1000 strokes : $+$ 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000s. : +- 4.0
Check tolerance	+ Spreed
cm3/1000s. : +- 6.0	† Tolerance
Spreed	+ cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : 9.0
Check tolerance	+
cm3/1000s. : 12.0	+
	<del></del>
<b></b>	+ CONTROL LEVER
(B) SETTING OF INJECTION PUMP	<del>†</del>
WITH GOVERNOR	+ control lever
	+ position degree : 65.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	†
	+ control lever
Rated speed rpm : 300	+ position degree : 119.0
guide sleeve	+ tolerance degree : +- 4.0
travel mm : 1.63	† DATED ODNED
Tolerance mm : + 0.20	† RATED SPEED
20101	17.00
Rated speed rpm : 958	+ rack travel mm : 13.00
guide sleeve	Rated speed rpm : 945
travel mm : 8.79	Tolerance 1/min : +- 5
Tolerance mm : + 0.15	T mode through my
Data dama dama da 777	+ rack travel mm : 4.00 + Rated speed rpm : 1065
Rated speed rpm : 777	t the state of the
guide sleeve travel mm : 6.70	† Tolerance 1/min : +- 15
travel mm : 6.70 Tolerance mm : +- 0.25	Track travel mm : 0.50
Toterance in : T 0.23	Tolerance mm : +- 0.50
Rated speed rpm : 520	Rated speed rpm : 1150
* T * T * T * T * T * T * T * T * T * T	T Kated Speed Phill : 1130
guide sleeve travel mm : 3.73	T
Tolerance mm : +- 0.25	<u> </u>
Toterance mail	I LOW IDLE
Rated speed rpm : 1260	T LOW IVEL
guide steeve	$\perp$
travel mm : 13.50	control lever
Tolerance mm : +- 0.50	position degree : 70.0
TOTAL MILLS TO THE TOTAL MILLS T	tolerance degree : +- 4.0
	+
GUIDE SLEEVE POSITION	- control lever
ANTAR AREFAR I ANTITOIS	position degree : 16.0
Rated speed rpm : 1115	tolerance degree : + 4.0
matta opeca i piii . III	, coco, and degree The

			ŧ	Datad apadd ann	
Testing:			Ŧ	Rated speed rpm Rated speed rpm	: >
Rated speed rpm rack travel mm	: 5.20		Ŧ	Check speed 1/min	: >
Tolerance mm	: <b>←</b> 0.10		<b>†</b>	Check speed 1/min	; <
Rated speed rpm	: 150		+	opeca (/m/ii)	• `
CRT mm min.	: > 6.00		1	FUEL DELIVERY CHA	RACTERI
Rated speed rpm	: 350		-	Aneroid pressure hPa	: 15
TORQUE CONTROL			‡	Rated speed rpm Del. quantity	: 6
Rated speed rpm	: 900		1	cm3/1000 strokes Tolerance	: 1
rack travel mm	: 14.00		+	cm3/1000 strokes	: +-
Tolerance mm	: +- 0.05		‡	Check tolerance cm3/1000s.	: +
Rated speed rpm rack travel mm			†	Anonoid mnocours	
Tolerance mm			I	Aneroid pressure hPa	:
			+	Rated speed rpm	: 5
Rated speed rpm	: 300		+	Del. quantity	
rack travel mm Tolerance mm	: 12.60 : + 0.20		†	cm3/1000 strokes Tolerance	: 1
ioretaire iiii	. + 0.20		I	cm3/1000 strokes	: +-
·		<del></del>	+	Check tolerance	•
ANEROID/ALTITUDE			+	cm3/1000s.	: +-
COMPENSATOR TEST			‡	***************************************	<del></del>
SETTING			<u> </u>	BREAKAWAY	
OL I IIII			1		
Rated speed rpm	: 900		+	Rack travel in mm	
Pressure hPa	: 1500		+	Rated speed rpm	: 9
rack travel mm Tolerance mm	: 14.00 : +- 0.05		‡	Tolerance 1/min	: +-
MEASUREMENT			1		
Pressure hPa	: -		1	STARTING FUEL DELT	IVERY
Rated speed rpm	: 900		+	Rated speed rpm	: 1
rack travel mm	9.05		+	rack travel mm	: 2
Tolerance mm	: + 0.20		1	Tolerance mm Del. quantity	: +-
Rated speed rpm	: 900		I	cm3/1000 strokes	: 2
Tatoo opeoa : p			+	Tolerance	-
Pressure hPa	: 375		+	cm3/1000 strokes	: +- ;
rack travel mm Tolerance mm	: 10.15 : + 0.15		1	Check tolerance cm3/1000s.	• 4 '
loter differmin			Ŧ	CHI37 10003.	• , -
Pressure hPa	: 750		+		
rack travel mm Tolerance mm	: 12.75 : +- 0.05		İ		
toterarice was			Ŧ	LOW IDLE	
START CUT-OUT		<del></del>	‡	Rated speed rpm	: 2
				rack travel mm	:
			•		

Check			
speed 1/min Check	: >	08	
speed 1/min	: <	190	
FUEL DELIVERY CHA	RACTE	RISTICS	
Aneroid pressure		1500	
hPa Rated speed rpm Del. quantity	:	1500 600	
cm3/1000 strokes Tolerance	:	198.0	
cm3/1000 strokes Check tolerance	: +-	- 2.0	
cm3/1000s.	: +-	5.0	
Aneroid pressure hPa	:		
Rated speed rpm Del. quantity	:	500	
cm3/1000 strokes	:	129.0	
cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000s.	: +-	4.0	
BREAKAWAY	_	47.00	
Rack travel in mm Rated speed rpm Tolerance 1/min	: +-	13.00 945 5	
STARTING FUEL DEL	IVERY	·	
Rated speed rpm rack travel mm Tolerance mm	: +-	100 20.50 0.50	
Del. quantity cm3/1000 strokes	:	255.0	
Tolerance cm3/1000 strokes	: +-	20.0	
Check tolerance cm3/1000s.	: +-	24.0	
	·	····	
LOW IDLE			
Rated speed rpm rack travel mm	:	250 5.20	

100 170

Tolerance mm	: +-	0.30
Del. quantity cm3/1000 strokes		17.0
Tolerance	•	17.0
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed Tolerance		
cm3/1000 strokes		8.0
Check tolerance	•	-,,
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 01.12.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 848 300

Injection pump

Pump designation : PE8P120A520LS8518 : 0 412 828 201

EP type number

Governor

Governer design. : RQV300...1150PA1039

: -3K

: 0 421 815 980 Governer no.

Cust. part No. : 51.11103-7492

Customer-spec. information

Customer : MAN

Motor : D 2848 LE 403

Power KW : 588.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 078

Inlet press. bar :

Tolerance bar

Overflow quantity

170 min. L/h

: +- 15.0 Tolerance l/h

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar

Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 5.65 Prestroke mm

: + 0.05Tolerance mm

Check

: + 0.10 tolerance mm

Rack travel in mm: 13.00

Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

Barrel no. : 8

BASIC SETTING

1150 Rated speed rpm :

Rack travel in mm: 13.70

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 337.0

	<del>+</del>	- Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes	: +- 1.0	CUIDE OF PEUE BOOTTION
Check tolerance cm3/1000s.	0	- GUIDE SLEEVE POSITION
	: + 4.0	Rated speed rpm : 1327
Spreed Tolerance	†	Rack travel in mm: 12.70
cm3/1000 strokes	: 8.0	- Tolerance mm : +- 1.30 - -
Check tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s.	: 12.0	•
Sea and Sea and anne	700	Rated speed rpm : 1150
Rated speed rpm	: 300 +	- Aneroid pressure - hPa : 2000
Rack travel in mm	: 5.00	Del. quantity
Tolerance mm		cm3/1000 strokes : 337.0
Del. quantity	1	Tolerance
cm3/1000 strokes	: 49.0	cm3/1000 strokes : + 1.0
Tolerance	. ,,,,	Check tolerance
cm3/1000 strokes	: +- 3.0 ¹	cm3/1000s. : + 4.0
Check tolerance	1	Spreed
cm3/1000\$.	: + 8.0	Tolerance
Spreed	<del>}</del>	cm3/1000 strokes : 8.0
Tolerance	1	Check tolerance
cm3/1000 strokes	: 8.0	cm3/1000s. : 12.0
Check tolerance	+	•
cm3/1000s.	: 12.0 +	
	†	
(7) 07777110 07 711	+	CONTROL LEVER
(B) SETTING OF IN	JECTION PUMP	
WITH GOVERNOR	†	control lever
	<b>__</b>	position degree : 118.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAV	EL	tolerance degree : +- 4.0  RATED SPEED
Rated speed rpm	: 300	KATED SI EED
guide sleeve	. 333	rack travel mm : 12.70
travel mm	: 1.61	Rated speed rpm : 1195
Tolerance mm	: + 0.20	Tolerance 1/min : +- 5
	+	
Rated speed rpm	: 1206	rack travel mm : 4.00
guide sleeve	+	Rated speed rpm : 1325
travel mm	: 9.84	Tolerance 1/min : + 15
Tolerance mm	: ← 0.15 +	
8-4-4	. 707	rack travel mm : 0.50
Rated speed rpm	: 797	Tolerance mm : +- 0.50
guide sleeve travel mm	: 6.36	Rated speed rpm : 1400
Tolerance mm	: +- 0.25	
roterance min	I	
Rated speed rpm	: 460	LOW IDLE
guide sleeve travel mm	: 3.78	
Tolerance mm	+ 0.25	control lever
TOTAL WINDS		position degree : 71.0
Rated speed rpm guide sleeve	: 1500	tolerance degree : + 4.0
travel mm	: 13.50	Testing:

		1		
Rated speed rpm	: 300	I		
rack travel mm	5.00	1	START CUT-OUT	
rack travel mm Tolerance mm	: +- 0.10	+		
		+	Rated speed rpm	: > 170
Rated speed rpm	: 200	†	Rated speed rpm	: < 230
CRT mm min.	: > 6.90	Ī	Check	
City that the 114.	. > 0.70	Ţ	speed 1/min	: > 150
Rated speed rpm	: 340	1	Check	, , , ,
		+	speed 1/min	: < 240
TOPOLIE CONTROL	<del></del>	+		
TORQUE CONTROL		Ī	FUEL DELIVERY CH	APACTERISTICS
Rated speed rpm	: 1150		LOCE DESTACKL OUR	ANACTENTO 1 100
rack travel mm	: 13.70	1	Aneroid pressure	
Tolerance mm	: +- 0.05	1	hPa	: 2000
		+	Rated speed rpm	
Rated speed rpm	: 1000	+	Del. quantity	
rack travel mm	: 13.65	+	cm3/1000 strokes	: 344.0
rack travel mm Tolerance mm	: + 0.10	+	Tolerance	
		+	cm3/1000 strokes	
Rated speed rpm		†	Check tolerance	
rack travel mm	: 12.60	+	cm3/1000s.	: +- 8.0
Tolerance mm	: + 0.10	+		
<b>5.1.</b> 1 1		†	Aneroid pressure	2002
Rated speed rpm	: 650	†	hPa	: 2000
rack travel mm	11.40	†	Rated speed rpm	: 850
Tolerance mm	: +- 0:10	Ť	Del. quantity cm3/1000 strokes	. 721 0
			Tolerance	321.0
ANEROID/ALTITUDE		I	cm3/1000 strokes	. +- 40
COMPENSATOR TEST		1	Check tolerance	
CON ENONION FEOT		1	cm3/1000s.	
		1		
SETTING		1	Aneroid pressure	
-		+	hPa	: 2000
Rated speed rpm	: 1150	+	Rated speed rpm	: 650
Pressure hPa	: 2000	+	Del. quantity	
rack travel mm	: 13.70	+	cm3/1000 strokes	: 299.0
Tolerance mm	: +- 0.05	+	Tolerance	
		+	cm3/1000 strokes	: +- 4.0
MEASUREMENT		†	Check tolerance	
Deserves hos		†	cm3/1000s.	: + 8.0
Pressure hPa	1150	Ť	Amonoid processes	
Rated speed rpm rack travel mm		I	Ameroid pressure hPa	• –
Tolerance mm	: +- 0.15	I	Rated speed rpm	500
TOCCI GITCE HAD	0.15	1	Del. quantity	. 500
Rated speed rpm	: 1150	1	cm3/1000 strokes	: 185.0
		1	Tolerance	
Pressure hPa	: 220	+	cm3/1000 strokes	: ← 1.0
rack travel mm	: 8.05	+	Check tolerance	
Tolerance mm	: +- 0.05	+	cm3/1000s.	: <b>←</b> 4.0
		+		
Pressure hPa	: 1050	+		
rack travel mm	: 11.90	†	BREAKAWAY	
Tolerance mm	: +- 0.15	†		
		+		

Rack travel in mm :

12.70

Rated speed rpm : 1195 Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 20.50 Toterance mm : +- 0.50 Del. quantity cm3/1000 strokes : 130.0 Tolerance cm3/1000 strokes : + 15.0Check tolerance cm3/1000s. : + 19.0 LOW IDLE 300 Rated speed rpm 5.00 rack travel mm : + 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 49.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 8.0 : +--Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. 12.0 End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.12.95 Test oil : ISO 4113

Combination No. : 0 403 234 005

Injection pump

Pump designation : PES4MW100/320/3RS152

: 0

EP type number : 0 413 204 015

Governor

Governer design. : RQV300...1100MW141K

Governer no. : 0 420 083 983

Cust. part No. :

Customer-spec. information

Customer : PERKINS

Motor : Phaser 110 TI

Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 4.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 13.00 Tolerance mm: + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

*NW before FB : 48.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 134.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.	: +- 4.0	+ Rated speed rpm : 1475
Spreed Tolerance		Rack travel in mm : 10.00 Tolerance mm : + 2.70
cm3/1000 strokes Check tolerance	: 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s.	: 7.5	Rated speed rpm : 1300
Rated speed rpm	: 325	Aneroid pressure + hPa : 1000
Rack travel in mr Tolerance mm		Del. quantity cm3/1000 strokes : 134.0
Del. quantity cm3/1000 strokes	: 18.0	+ Tolerance + cm3/1000 strokes : + 1.0
Tolerance cm3/1000 strokes Check tolerance	: <del></del> 2.0	+ Check tolerance + cm3/1000s. : + 4.0
cm3/1000s. Spreed	: +- 4.5	+ Spreed + Tolerance + cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes	: 3.5	Check tolerance + cm3/1000s. : 7.5
Check tolerance cm3/1000s.	: 5.5	‡
(B) SETTING OF IN WITH GOVERNOR  GUIDE SLEEVE TRAN		control lever position degree : 120.0 tolerance degree : + 4.0
Rated speed rpm		RATED SPEED
guide sleeve travel mm Tolerance mm	: 1.61 : + 0.20	rack travel mm : 13.10 Rated speed rpm : 1345 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm		rack travel mm : 4.00 Rated speed rpm : 1480 Tolerance 1/min : +- 15
Tolerance mm	: +- 0.15	+ rack travel mm : 0.50
Rated speed rpm guide sleeve	: 881	+ Tolerance mm : +- 0.50 + Rated speed rpm : 1600
travel mm Tolerance mm	: 6.46 : +- 0.25	†
Rated speed rpm guide sleeve	: 500	LOW IDLE
travel mm Tolerance mm Rated speed rpm	: 3.91 : +- 0.25 : 1630	control lever position degree : 74.0 tolerance degree : +- 4.0
guide sleeve travel mm	: 13.50	Testing:
Tolerance mm  GUIDE SLEEVE POSI	: +- 0.50 TION	Rated speed rpm : 325 rack travel mm : 5.50 Tolerance mm : + 0.10

Dated aread man	. 200	†
Rated speed rpm		FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: > 7.50	+ Aneroid pressure
TORQUE CONTROL		hPa : 1000 Rated speed rpm : 800
Rated speed rpm		Del. quantity cm3/1000 strokes : 131.0 Tolerance
rack travel mm Tolerance mm		+ cm3/1000 strokes : + 2.0 + Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 800 : 12.90	cm3/1000s. : +- 5.0 Spreed
Rated speed rpm		+ Tolerance + cm3/1000 strokes : 6.0 + Check tolerance
rack travel mm Tolerance mm	: 11.10	cm3/1000s. : 9.0
ANEROID/ALTITUDE COMPENSATOR TEST		Aneroid pressure  hPa : 1000 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 110.0
SETTING		Tolerance + cm3/1000 strokes : + 1.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 14.05	Check tolerance cm3/1000s. : + 4.0 Aneroid pressure hPa : -
MEASUREMENT		Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 8.80	Tolerance + cm3/1000 strokes : + 1.0 + Check tolerance - cm3/1000s. : + 3.0
Rated speed rpm	: 1300	<u> </u>
Pressure hPa rack travel mm Tolerance mm	: 425 : 12.90 : + 0.15	Rack travel in mm: 13.10 Rated speed rpm: 1345
Pressure hPa rack travel mm Tolerance mm	: 250 : 9.90 : +- 0.05	Tolerance 1/min : +- 5
START CUT-OUT		STARTING FUEL DELIVERY
Rated speed rpm Rated speed rpm		+ Rated speed rpm : 100 + rack travel mm : 20.00 + Tolerance mm : +- 1.00 + Del. quantity
Check speed 1/min Check	: > 170	- cm3/1000 strokes : 85.0 - Tolerance - cm3/1000 strokes : + 7.0
speed 1/min	: < 250	Check tolerance : +- 10.0

## LOW IDLE

Rated speed rpm rack travel mm Tolerance mm Del. quantity	: : +-	325 5.50 0.20	
cm3/1000 strokes	:	18.0	
Tolerance		2.2	
cm3/1000 strokes Check tolerance	: +	2.0	
cm3/1000s.	: +-	4.5	
Spreed Tolerance			
cm3/1000 strokes	:	3.5	
Check tolerance			
cm3/1000s.	:	5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.12.95 Test oil : ISO 4113

Combination No. : 0 403 236 005

Injection pump

Pump designation : PES6MW100/320/3RS151

: 8-1

EP type number : 0 413 206 018

Governor

Governer design. : RQV325...1300MW133

: -1K

Governer no. : 0 420 083 984

Cust. part No. :

Customer-spec. information Customer : PERKINS Motor : 180 TI Power KW : 134.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 5.00
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 13.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

*NW before FB : 46.50

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.65
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 141.0

Tolerance cm3/1000 strokes	: + 1.0	CUIDE OF SELECTION
Check tolerance cm3/1000s.	: +- 4.0	GUIDE SLEEVE POSITION Rated speed rpm : 1475
Spreed Tolerance cm3/1000 strokes	: 4.0	Rack travel in mm : 10.00 Tolerance mm : +- 2.70
Check tolerance cm3/1000s.	: 7.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 325	+ Rated speed rpm : 1300 + Aneroid pressure + hPa : 900
Rack travel in m Tolerance mm Del. quantity		Del. quantity cm3/1000 strokes : 141.0 Tolerance
cm3/1000 strokes Tolerance		+ cm3/1000 strokes : +- 1.0 + Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.		+ cm3/1000s. : + 4.0 + Spreed + Tolerance
Spreed Tolerance	. — 4.3	cm3/1000 strokes : 4.0
cm3/1000 strokes Check tolerance cm3/1000s.		+ cm3/1000s. : 7.5
(B) SETTING OF IN		CONTROL LEVER
WITH GOVERNOR		<pre>control lever position degree : 120.0 tolerance degree : + 4.0</pre>
GUIDE SLEEVE TRAV		RATED SPEED
Rated speed rpm guide sleeve travel mm Tolerance mm	: 325 : 1.61 : +- 0.20	rack travel mm : 13.60 Rated speed rpm : 1345 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1355 : 10.23 : +- 0.15	rack travel mm : 4.00 Rated speed rpm : 1480 Tolerance 1/min : + 15
Rated speed rpm guide sleeve	: 881	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600
travel mm Tolerance mm	: 6.46 : + 0.25	İ
Rated speed rpm guide sleeve		LOW IDLE
travel mm Tolerance mm	: 3.91 : +- 0.25	t control lever position degree : 75.0
Rated speed rpm guide sleeve	: 1630	tolerance degree : + 4.0
travel mm Tolerance mm	: 13.50 : +- 0.50	+ Testing:

Rated speed rpm rack travel mm	: 325 5 80	<u> </u>
Tolerance mm	: + 0.10	START CUT-OUT
Rated speed rpm	: 200	Rated speed rpm : > 220 Rated speed rpm : < 240
CRT mm mir.	: > 8.00	Check
		- + speed 1/min : > 170
TORQUE CONTROL		+ Check + speed 1/min : < 270
Rated speed rpm rack travel mm Tolerance mm	: 1300 : 14.65	
Tolerance mm	: +- 0.05	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm		Aneroid pressure hPa : 900
Tolerance mm		- Rated speed rpm : 800
Rated speed rpm		Del. quantity cm3/1000 strokes : 141.0
rack travel mm Tolerance mm	: + 0.10	+ Tolerance + cm3/1000 strokes : + 2.0
Rated speed rpm	: 1000	+ Check tolerance + cm3/1000s. : + 5.0
rack travel mm Tolerance mm	: 14.40 : + 0.15	+ Spreed + Tolerance
Rated speed rpm	: 700	+ cm3/1000 strokes : 6.0 + Check tolerance
rack travel mm Tolerance mm	: 12.90 : + 0.15	cm3/1000s. : 9.0
(Octor arrest trait		Aneroid pressure hPa : 900
		1 1114 . 700
ANEROID/ALTITUDE		Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST		Del. quantity cm3/1000 strokes : 116.5
		Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0
COMPENSATOR TEST SETTING Rated speed rpm		Del. quantity cm3/1000 strokes : 116.5 Tolerance
COMPENSATOR TEST	: 900 : 14.65	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa	: 900	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0  Aneroid pressure hPa : -
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa rack travel mm	: 900 : 14.65	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT Pressure hPa	: 900 : 14.65 : + 0.05	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm	: 900 : 14.65 : + 0.05 : - : 1300 : 9.20	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 900 : 14.65 : + 0.05 : - : 1300 : 9.20 : + 0.10	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : + 1.0
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 900 : 14.65 : + 0.05 : + 0.05 : 1300 : 9.20 : + 0.10 : 1300	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm Pressure hPa Rated speed rpm	: 900 : 14.65 : + 0.05 : + 0.05 : 1300 : 9.20 : + 0.10 : 1300 : 400 : 13.25	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0  BREAKAWAY
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : 14.65 : + 0.05 : + 0.05 : 1300 : 9.20 : + 0.10 : 1300 : 400 : 13.25 : + 0.15	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0  BREAKAWAY  Rack travel in mm : 13.60 Rated speed rpm : 1345
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Pressure hPa Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm Pressure hPa Rated speed rpm	: 900 : 14.65 : + 0.05 : 1300 : 9.20 : + 0.10 : 1300 : 400 : 13.25 : + 0.15 : 250 : 10.30	Del. quantity cm3/1000 strokes : 116.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 69.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0  BREAKAWAY  Rack travel in mm : 13.60

### STARTING FUEL DELIVERY

Rated speed rpm Del. quantity cm3/1000 strokes : 85.0 Tolerance cm3/1000 strokes : +-7.0

100

Check tolerance

cm3/1000s. : + 10.0

### LOW IDLE

325 Rated speed rpm rack travel mm 5.80 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance 3.5 cm3/1000 strokes : Check tolerance 5.5 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.12.95 : ISO 4113 Test oil

Combination No. : 0 403 276 014

Injection pump

Pump designation : PES6MW100/720RS1527 EP type number : 0 413 206 026

Governor

Governer design. : RSV350...1300MW0A391

Governer no. : 0 420 085 277

: 0260749102 Cust. part No.

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor Power KW : 177.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : <del>+-</del> 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter : 3.0 x length mm 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +-1.0

Prestroke mm 4.55 Tolerance mm : + 0.05Check : + - 0.10tolerance mm

Rack travel in mm: 20.00 Tolerance mm : +- 1.00

: 1-5-3-6-2-Firing order : 4

: 0-60-120-180-240 Phasing : -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

### BASIC SETTING

Rated speed rpm 1300

Rack travel in mm: 14.40 Tolerance mm : + - 0.05

Del. quantity cm3/1000 strokes : 133.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. : +--4.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

		3.		
Check tolerance cm3/1000s.	; 7.5	Ī	control lever position degree tolerance degree	
Rated speed rpm		+	RATED SPEED	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: +- 0.30	† + + +	rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70 : 1600
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 4.5	Ī	rack travel mm Rated speed rpm	: 4.00 : 1465
Spreed Tolerance		+	rack travel mm Rated speed rpm	: 13.40 : 1345
cm3/1000 strokes Check tolerance		‡	Tolerance 1/min	<b>:</b> +- 5
cm3/1000s.	: 5.5	1	ASSEMBLY GOVERNOR	
(B) SETTING OF IN.	JECTION PUMP	+	Rated speed rpm rack travel mm	
		++++	Rated speed rpm Tolerance 1/min rack travel mm	: 1444 : +- 4 : 4.00
GUIDE SLEEVE POSIT	rion	+	Dottod annud annu	: 1341
Rated speed rpm	: 800	I	Rated speed rpm rack travel mm	: 13.40
	: 0.65 : + 0.35	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: 1445 : + 4 : 4.00
governor spring pre-tension click setting x	: 4.50	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm rack travel mm	
FULL LOAD DELIVERY Rated speed rpm	'AT FULL LOAD STOP	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: 1446 : +- 4 : 4.00
Aneroid pressure hPa Del. quantity	: 1200	<u> </u>	Rated speed rpm rack travel mm	: 1343 : 13.40
cm3/1000 strokes Tolerance	: 133.0	†	Rated speed rpm Tolerance 1/min	: 1447
cm3/1000 strokes Check tolerance	: +- 1.0	‡	rack travel mm	: 4.00
cm3/1000s. Spreed Tolerance	: +- 4.0	Î	Rated speed rpm rack travel mm	: 1344 : 13.40
cm3/1000 strokes Check tolerance	: 4.0	+	Rated speed rpm Tolerance 1/min	: 1448 : + 4
cm3/1000s.	: 7,5	‡	rack travel mm	: 4.00
CONTROL LEVER		<u> </u>	Rated speed rpm rack travel mm	: 1345 : 13.40
CONTROL LEVER		<b>T</b>	Rated speed rpm Tolerance 1/min	: 1449 : +- 4

rack travel mm	: 4.00	+
		- FUEL DELIVERY O
LOW IDLE		+ Aneroid pressur
Setting point w/	out bumper spring	h Do
Rated speed rpm	: 350	+ Rated speed rpm + Del. quantity
ack travel mm		+ cm3/1000 stroke
Testing:		+ Tolerance → cm3/1000 stroke
resumg.		Check tolerance
rack travel mm	: 2.00	+ cm3/1000s.
Rated speed rpm Tolerance 1/min		+ Spreed + Tolerance
ioterance immi	. +- 50	+ cm3/1000 stroke
Rated speed rpm	: 100	+ Check tolerance
CRT mm min.	: > 19.00	t cm3/1000s.
GIVE HAU IN CLA	. > 17.00	Rated speed rpm Del. quantity cm3/1000 stroke Tolerance cm3/1000stroke Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 stroke Check tolerance cm3/1000stroke Check tolerance cm3/1000s. Aneroid pressur hPa Rated speed rpm Del. quantity cm3/1000 stroke Tolerance
		- hPa
TORQUE CONTROL		+ Rated speed rpm
Rated speed rpm	: 1300	+ Del. quantity + cm3/1000 stroke
rack travel mm	: 14.40	+ Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 stroke
Datad anned nem	. 750	+ Check tolerance + cm3/1000s.
Rated speed rpm rack travel mm	: 14.40	T (1137 10003.
Tolerance mm	: +- 0.10	+
ANEROID/ALTITUDE	<del></del>	STARTING FUEL D
COMPENSATOR TEST		+
		+ Rated speed rpm
SETTING		+ Del. quantity + cm3/1000 stroke
or i tida		+ Tolerance
Rated speed rpm	: 500	- cm3/1000 stroke
Pressure hPa	: 1200	+ Check tolerance
rack travel mm Folerance mm	: 14.40 : +- 0.10	$\pm$ cm3/1000s.
	. 4- 0.10	Ŧ
BEASUREMENT		<u> </u>
ressure hPa	: -	+ LOW IDLE
Rated speed rpm	: 500	+
Tolerance mm	: +- 0.10	Rated speed rpm rack travel mm
Rated speed rpm	: 500	+ Tolerance mm
		<pre>Del. quantity</pre>
Pressure hPa	: 800	+ cm3/1000 stroke
rack travel mm Tolerance mm	: 5.10 : + 0.10	Tolerance cm3/1000 stroke
Officially in	0.10	+ Check tolerance
Pressure hPa	: 450	+ cm3/1000s.
rack travel mm	: 1.90	+ Spreed
Tolerance mm	: +- 0.10	† Tolerance
		+ cm3/1000 stroke:

FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	
hPa	: 1200
Rated speed rpm	: 750
Del. quantity	470.0
cm3/1000 strokes	: 132.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance	2.0
cm3/1000s.	: +- 5.0
Spreed	
Tolerance	_
cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
CIIIS7 10005.	: 9.0
Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 46.0
Tolerance	: 46.0
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: <del>-</del> 3.0
STARTING FUEL DEL	
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes	: 160.0
Tolerance	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
cm3/1000 strokes	: <del> 5.0</del>
Check tolerance	
cm3/1000s.	: + 8.0
LOW IDLE	
Rated speed rpm	: 350
rack travel mm	: 3.80
Tolerance mm	: ← 0.30
Del. quantity cm3/1000 strokes	: 12.0
Tolerance	. 12.0
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000s.	: +- 4.5
Spreed Toterance	
cm3/1000 strokes	: 3.5

Check	toleranc	e
cm3/10	000s.	

5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.11.95 Test oil : ISO 4113

Combination No. : 0 403 436 114

Injection pump

Pump designation : PES6MW100/320/3RS119

: 4-1

EP type number : 0 413 406 221

Governor

Governer design. : RQV300...1300MW108K

Governer no. : 0 420 083 998

Cust. part No. :

Customer-spec. information

Customer : PERKINS Motor : 180 TI Power KW : 134.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0

Prestroke mm : 3.35
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 13.00

Tolerance mm : ← 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

*NW before FB : 46.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 136.5

Tolerance

cm3/1000 strokes : +- 1.0

<b>a.</b>	·	
Check tolerance cm3/1000s.	: + 4.0	GUIDE SLEEVE POSITION
Spreed Tolerance	<u> </u>	Rated speed rpm : 1400
cm3/1000 strokes	: 4.0	Rack travel in mm : 10.00 Tolerance mm : +- 2.70
Check tolerance cm3/1000s.	: 7.5	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 300	Rated speed rpm : 1300
Rack travel in mm	. 620	Aneroid pressure
Tolerance mm	: + 0.20	hPa : 900
Del. quantity	1	Del. quantity
cm3/1000 strokes	: 16.0	cm3/1000 strokes : 136.5
Tolerance	+	Tolerance
cm3/1000 strokes	: + 2.0	cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s.	: + 4.5	Check tolerance : +- 4.0
Spreed	: +- 4.5	cm3/1000s. : +- 4.0 Spreed
Tolerance	I	Tolerance
cm3/1000 strokes	: 3.5	cm3/1000 strokes : 4.0
Check tolerance	+	Check tolerance
cm3/1000s.	: 5.5	cm3/1000s. : 7.5
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve travel mm	: 300 : 1.70	control lever position degree : 120.0 tolerance degree : +- 4.0  RATED SPEED
Rated speed rpm guide sleeve	: 300	position degree : 120.0 tolerance degree : + 4.0 RATED SPEED rack travel mm : 13.15
Rated speed rpm guide sleeve travel mm	: 300 : 1.70 : + 0.20 : 1355	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 300 : 1.70 : + 0.20 : 1355	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 300 : 1.70 : + 0.20 : 1355 : 10.13	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25 : 480	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25 : 480 : 3.44 : + 0.25	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25 : 480 : 3.44 : + 0.25	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25 : 480 : 3.44 : + 0.25 : 1640	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 76.0 tolerance degree : + 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.70 : + 0.20 : 1355 : 10.13 : + 0.15 : 892 : 6.43 : + 0.25 : 480 : 3.44 : + 0.25 : 1640 : 13.50	position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.15 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600  LOW IDLE  control lever position degree : 76.0

Rated speed rpm rack travel mm	: 300 : 6.20	†
Tolerance mm	: + 0.10	START CUT-OUT
Rated speed rpm	: 200	Rated speed rpm :> 190 Rated speed rpm :< 240
CRT mm min.	; > 8.00	Check
TORQUE CONTROL		speed 1/min :> 170 Check
Rated speed rpm	: 1300	speed 1/min : < 250
rack travel mm Tolerance mm	: +- 0.05	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm	: 13.15	Aneroid pressure 900
Tolerance mm Rated speed rpm		Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 130.5
rack travel mm Tolerance mm	: 11.60	+ Tolerance + cm3/1000 strokes : + 2.0
Rated speed rpm	: 1000	- Check tolerance - cm3/1000s. : + 5.0
rack travel mm Tolerance mm	: 13.60 : + 0.15	+ Spreed + Tolerance
Rated speed rpm rack travel mm	: 700 : 12.75	+ cm3/1000 strokes : 6.0 + Check tolerance + cm3/1000s. : 9.0
Tolerance mm		Aneroid pressure
ANEROID/ALTITUDE		+ hPa : 900 + Rated speed rpm : 500
COMPENSATOR TEST		+ Del. quantity + cm3/1000 strokes : 111.0 + Tolerance
SETTING		cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm Pressure hPa	: 900	cm3/1000s. : +- 5.0
rack travel mm Tolerance mm	: 14.15 : + 0.05	+ Aneroid pressure + hPa : - Rated speed rpm : 500
MEASUREMENT		+ Del. quantity + cm3/1000 strokes : 62.0
Pressure hPa Rated speed rpm		+ Tolerance + cm3/1000 strokes : +- 1.0
rack travel mm Tolerance mm	: 9.30 : + 0.10	+ Check tolerance + cm3/1000S. : + 3.0
Rated speed rpm	: 1300	BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 220 : 11.20 : +- 0.15	Rack travel in mm : 13.15
Pressure hPa rack travel mm Tolerance mm	: 180 : 10.45 : + 0.05	+ Rated speed rpm : 1345 + Tolerance 1/min : +- 5 +

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 85.0
Tolerance
cm3/1000 strokes : + 7.0
Check tolerance
cm3/1000s. : + 10.0

### LOW IDLE

300 Rated speed rpm 6.20 rack travel mm Tolerance mm : **←** 0.20 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance 4.5 cm3/1000S.Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 30.11.95 : ISO 4113

Combination No. : 0 403 444 145

Injection pump

Pump designation : PES4MW100/320RS1199

EP type number

: 0 413 404 112

Governor

Governer design. : RQV300...1100MW131K

Governer no.

: 0 420 083 987

Cust. part No.

Customer-spec. information : PERKINS Customer

Motor : VME

Power KW 74.0

TEST BENCH REQUIREMENTS

: 3.1 Inlet line

Test oil inlet

temp. °C 40

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Overflow quantity

min. L/h 100

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar

1.5 Tolerance bar

Test lines : 1 680 750 008 Outside diameter : 6.0

x inside diameter:

2.0

x length mm

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : +-1.0

Prestroke mm 3.35

Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 13.00

: +- 1.00 Tolerance mm

Firing order : 1-3-4-2

: 0-90-180-270 Phasina

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

*NW before FB : 48.50

: 1 Barrel no.

BASIC SETTING

Rated speed rpm 1100

12.95 Rack travel in mm: Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +-1.0

C10

	+
Check tolerance cm3/1000s. : +- 3.0	GUIDE SLEEVE POSITION
Spreed Tolerance	Rated speed rpm : 1220
cm3/1000 strokes : 3.5	Rack travel in mm: 10.00 Tolerance mm: + 2.70
Check tolerance cm3/1000s. : 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 1100
Rack travel in mm : 6.20 Tolerance mm : +- 0.20	Aneroid pressure hPa : 900
Del. quantity cm3/1000 strokes : 18.0	Del. quantity cm3/1000 strokes : 130.0
Tolerance cm3/1000 strokes : + 2.0	Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000S. : +- 4.5 Spreed	the Check tolerance cm3/1000s. : + 3.0 the Spread
Tolerance cm3/1000 strokes : 3.5	Tolerance cm3/1000 strokes : 3.5
Check tolerance cm3/1000s. : 5.5	t Check tolerance cm3/1000s. : 6.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 122.0
Rated speed rpm : 300	tolerance degree : + 4.0
guide sleeve travel mm : 1.70	RATED SPEED
Tolerance mm : + 0.20	rack travel mm : 11.90 Rated speed rpm : 1145
Rated speed rpm : 1156 guide sleeve	Tolerance 1/min : + 5
travel mm : 10.48 Tolerance mm : + 0.15	+ rack travel mm : 4.00 + Rated speed rpm : 1225 + Tolerance 1/min : +- 15
Rated speed rpm : 738 guide sleeve	rack travel mm : 0.50
travel mm : 5.47 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1300
Rated speed rpm : 410 guide sleeve	
travel mm : 3.05 Tolerance mm : + 0.25	+ LOW IDLE
Rated speed rpm : 1340 guide sleeve	t control lever position degree : 76.0
travel mm : 13.50 Tolerance mm : +- 0.50	tolerance degree : +- 4.0
	Testing:

Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.20 : + 0.10	Check speed 1/min : < 250
Rated speed rpm	: 200	FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: > 7.50	Aneroid pressure hPa : 900 Rated speed rpm : 800
TORQUE CONTROL		Del. quantity cm3/1000 strokes : 128.0
Rated speed rpm rack travel mm	: 12.95	Tolerance cm3/1000 strokes : +- 1.5 Check tolerance
Tolerance mm  Rated speed rpm	: 800	cm3/1000s. : + 4.0 Spreed
rack travel mm Tolerance mm	: 12.50 : + 0.10	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm rack travet mm	: 11.30	+ cm3/1000s. : 7.0
Tolerance mm	: +- 0.10	+ Aneroid pressure + hPa : 900 - Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST		+ Del. quantity + cm3/1000 strokes : 111.0 + Tolerance
SETTING		cm3/1000 strokes : +- 1.5 Check tolerance
Rated speed rpm Pressure hPa	: 900	+ cm3/1000s. : +- 4.0 - Aneroid pressure
rack travel mm Tolerance mm		+ hPa : - Rated speed rpm : 500 Del. quantity
MEASUREMENT		cm3/1000 strokes : 72.0 Tolerance
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		+ cm3/1000 strokes : +- 1.0 - Check tolerance - cm3/1000s. : +- 3.0
Rated speed rpm		BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 11.15	Rack travel in mm : 11.90 Rated speed rpm : 1145 Tolerance 1/min : + 5
Pressure hPa rack travel mm Tolerance mm	: 150 : 9.75 : + 0.05	<del></del>
		+ STARTING FUEL DELIVERY
START CUT-OUT		+ Rated speed rpm : 100 + rack travel mm : 20.00
Rated speed rpm Rated speed rpm	: > 190 : < 230	+ Tolerance mm : ← 1.00 + Del. quantity + cm3/1000 strokes : 85.0
Check speed 1/min	: > 170	+ Tolerance + cm3/1000 strokes : +- 7.0

Check tolerance		
cm3/1000s.	: +	10.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.20 : +- 0.20
Del. quantity cm3/1000 strokes	: 18.0
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000s.	: 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.12.95 : ISO 4113 Test oil

Combination No. : 0 403 446 333

Injection pump

Pump designation : PES6MW100/720RS1131

: -1

EP type number : 0 413 406 165

Governor

Governer design. : RQV300...1300MW151

: 0 420 083 333 Governer no.

Cust. part No. : 0260747102

Customer-spec. information

: MB-NFZ Customer Motor : OM 366 LA

Power KW : 155.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

: 1 419 992 198 Overflow valve

1.5 Inlet press. bar :

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar 173.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar :  $\leftarrow$  1.0

Prestroke mm 3.65 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: + - 0.50Tolerance

Check

tolerance °NW : + - 0.75

BASIC SETTING

1300 Rated speed rpm :

13.15 Rack travel in mm :

: + 0.05Tolerance mm

Del. quantity

cm3/1000 strokes : 99.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. : +-3.0

Spreed

Tolerance

3.5 cm3/1000 strokes :

	+	
Check tolerance cm3/1000s.	: 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 300	Rated speed rpm : 1300 Aneroid pressure
Rack travel in mm	: 6.20 I	hPa : 1000
Tolerance mm	: + 0.20	Del. quantity
Del. quantity	+	cm3/1000 strokes : 99.0
cm3/1000 strokes Tolerance	: 11.0	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes	: + 2.0	Check tolerance
Check tolerance	+	cm3/1000s. : +- 3.0
cm3/1000s.	: + 4.5	Spreed
Spreed	†	Tolerance cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes	: 3.5	Check tolerance
Check tolerance	, 3.3	cm3/1000s. : 6.0
cm3/1000s.	: 5.0	
	+	
(B) SETTING OF IN.	JECTION PUMP	CONTROL LEVER
WITH GOVERNOR	· .	control lever
		position degree : 113.0
GUIDE SLEEVE TRAV	+	tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 300	RATED SPEED
travel mm	: 1.37	rack travel mm : 12.10
Tolerance mm	: + 0.20	Rated speed rpm : 1345 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	: 1355	rack travel mm : 4.00
travel mm	: 8.65	Rated speed rpm : 1460
Tolerance mm	: +- 0.15	Tolerance 1/min : + 15
Rated speed rpm	: 885	rack travel mm : 0.50
guide sleeve	. 503	Tolerance mm : +- 0.50
travel mm	: 5.01	Rated speed rpm : 1550
Tolerance mm	: ← 0.25	
Rated speed rpm guide sleeve	: 490	LOW IDLE
travel mm	: 2.86	
Tolerance mm	: + 0.25	
<b>8</b> 1 1	+	control lever
Rated speed rpm guide sleeve	: 1610	position degree : 69.0 tolerance degree : +- 4.0
travel mm	: 11.50	toterance degree 4.0
Tolerance mm	: +- 0.50	Testing:
		Rated speed rpm : 300
GUIDE SLEEVE POSITION		rack travel mm : 6.20
	+	Tolerance mm : +- 0.10
Rated speed rpm	: 1440 +	Datad aread are
Pack thought in the	. 10.00	Rated speed rpm : 200
Rack travel in mm Tolerance mm		CRT mm min. : > 7.70
	+	

		† Tolerance
TORQUE CONTROL	<del></del>	
		+  cm3/1000s. : + 4.0
Rated speed rpm	: 1300	+ Spreed
rack travel mm	: 13.15	+ Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : 5.0
		+ Check tolerance
Rated speed rpm	: 600	+ cm3/1000s. : 7.0
rack travel mm Tolerance mm	: 13.15	+
Tolerance mm	: <b>←</b> 0.10	+ Aneroid pressure
		+ hPa :
	<del></del>	+ Rated speed rpm : 500
ANEROID/ALTITUDE		+ Del. quantity
COMPENSATOR TEST		+ cm3/1000 strokes : 42.0
		+ Tolerance
		+ cm3/1000 strokes : +- 1.0
SETTING		+ Check tolerance
Daniel III I	. 500	+ cm3/1000s. : +- 3.0
Rated speed rpm		<b>†</b>
Pressure hPa	: 1000	DDDAVALAY
rack travel mm		+ BREAKAWAY
Tolerance mm	: + 0.10	†
MEASUREMENT		Dook traval in 12 40
MEASUREMENT		+ Rack travel in mm: 12.10
Danasina hDa		+ Rated speed rpm : 1345
Pressure hPa	. F00	† Tolerance 1/min : +- 5
Rated speed rpm		†
rack travel mm Tolerance mm		<b>†</b>
roterance num	: +- 0.10	STARTING FUEL DELIVERY
Datad aread non	: 500	T STARTING FUEL DELIVERT
Rated speed rpm	: 500	Rated speed rpm : 100
Pressure hPa	: 350	+ Del. quantity
rack travel mm		+ cm3/1000 strokes : 105.0
Tolerance mm		Tolerance
roter drice min	0.13	+ cm3/1000 strokes : +- 5.0
Pressure hPa	: 200	Check tolerance
rack travel mm	: 11.25	+ cm3/1000s. : +- 8.0
Tolerance mm	: + 0.05	T (1111) (1010).
TO COT GITTO CHIII	0.05	1
START CUT-OUT		
		LOW IDLE
Rated speed rpm	: > 100	+
Rated speed rpm		Rated speed rpm : 300
, ,		+ rack travel mm : 6.20
Check		Tolerance mm : +- 0.20
speed 1/min	: > 80	+ Del. quantity
Check		+ cm3/1000 strokes : 11.0
speed 1/min	<b>: &lt;</b> 250	† Tolerance
•	·•	+ cm3/1000 strokes : +- 2.0
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000s. : +- 4.5
		Spreed
Aneroid pressure		+ Tolerance
hPa	: 1000	+ cm3/1000 strokes : 3.5
Rated speed rpm	: 600	† Check tolerance
Del. quantity		$\frac{1}{2}$ cm3/1000s. : 5.0
cm3/1000 strokes	: 86.5	<del>}</del>
	·	•

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.12.95 Test oil : ISO 4113

Combination No. : 0 403 446 334

Injection pump

Pump designation : PES6MW100/720RS1243

EP type number : 0 413 406 243

Governor

Governer design. : RQV325...1350MW153K

Governer no. : 0 420 083 982

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT Motor : 8060.45.7280

Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Tolerance C : + 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : ← 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 12.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.60

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 118.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

	1		
Check tolerance cm3/1000s.	: 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP	_
Rated speed rpm	: 325	Rated speed rpm : 700 Aneroid pressure	
Rack travel in ma		hPa : 1200	
Tolerance mm Del. quantity	: + 0.10	Del. quantity cm3/1000 strokes : 118.5	
cm3/1000 strokes	: 20.0	Tolerance	
Tolerance cm3/1000 strokes	: + 2.0	cm3/1000 strokes : +- 1.0 Check tolerance	
Check tolerance cm3/1000s.	: + 4.5	cm3/1000s. : + 3.0 Spreed	
Spreed	1	Tolerance	
Tolerance cm3/1000 strokes	: 2.0	cm3/1000 strokes : 4.5 Check tolerance	
Check tolerance	· +	cm3/1000s. : 7.0	
cm3/1000s.	: 4.5		
(B) SETTING OF IN	NECTION PUMP	CONTROL LEVER	-
MIIII GOVENION	<del>-</del>	control lever	
GUIDE SLEEVE TRAV	EL	position degree : 122.0 tolerance degree : +- 4.0	
Rated speed rpm guide sleeve	: 325	RATED SPEED	
travel mm	: 1.83	rack travel mm : 13.90	
Tolerance mm	: + 0.20	Rated speed rpm : 1425 Tolerance 1/min : +- 5	
Rated speed rpm	: 1442		
guide sleeve travel mm	: 10.60	rack travel mm : 4.00 Rated speed rpm : 1545	
Tolerance mm	: + 0.15	Tolerance 1/min : + 15	
Rated speed rpm guide sleeve	: 902	rack travel mm : 0.50 Tolerance mm : +- 0.50	
travel mm	: 5.88	Rated speed rpm : 1650	
Tolerance mm	: <b>←</b> 0.25		
Rated speed rpm guide sleeve	: 470	LOW IDLE	-
travel mm	: 3.47	24, 1922	
Tolerance mm	: +- 0.25	control lever	
Rated speed rpm	: 1670	position degree : 77.0 tolerance degree : +- 4.0	
guide sleeve travel mm	: 13.50	_	
Tolerance mm	: +- 0.50	Testing:	
		Rated speed rpm : 325	
GUIDE SLEEVE POSIT	TION	rack travel mm : 5.60 Tolerance mm : +- 0.10	
Rated speed rpm	: 1500		
Rack travel in mm	: 11.00	Rated speed rpm : 200	
Tolerance mm		CRT mm min. : > 8.00	
	т		

		+	Tolerance	
TORQUE CONTROL			cm3/1000 strokes Check tolerance	: +- 2.0
TOTAGE GOTTINGE		1	cm3/1000s.	: +- 5.0
Rated speed rpm		+	Spreed	
rack travel mm Tolerance mm		†	Tolerance cm3/1000 strokes	: 6.0
rocerance min	. +- 0.05	I	Check tolerance	. 0.0
Rated speed rpm	: 1200	+	cm3/1000s.	: 9.0
rack travel mm	: 14.70	+		
Tolerance mm	: ← 0.10	1	Aneroid pressure hPa	: 1200
Rated speed rpm	: 900	1	Rated speed rpm	
rack travel mm	: 13.50	+	Del. quantity	
Tolerance mm	: + 0.10	+	cm3/1000 strokes	: 122.0
Rated speed rpm	: 1350	I	Tolerance cm3/1000 strokes	: +- 1.5
rack travel mm		+	Check tolerance	
Tolerance mm	: ← 0.10	+	cm3/1000s.	: <b>←</b> 4.0
			Aneroid pressure	
ANEROID/ALTITUDE		1	hPa	: 1200
COMPENSATOR TEST		+	Rated speed rpm	: 1350
		+	Del. quantity cm3/1000 strokes	: 127.0
SETTING		I	Tolerance	: 127.0
00112110		1	cm3/1000 strokes	: <b>←</b> 2.0
Rated speed rpm		+	Check tolerance	
Pressure hPa	: 1200 : 14.90	†	cm3/1000s.	: +- 5.0
rack travel mm Tolerance mm	: + 0.10	I	Aneroid pressure	
. 0 CG. GI. 100 MAIN	• • • • • • • • • • • • • • • • • • • •	+	hPa	: -
MEASUREMENT		+	Rated speed rpm	: 500
Pressure hPa	•	1	Del. quantity cm3/1000 strokes	: 73.0
Rated speed rpm	1350	Ţ	Tolerance	. 75.0
rack travel mm	: 9.25	+	cm3/1000 strokes	: +- 1.0
Tolerance mm	: +- 0.10	†	Check tolerance	. 70
Rated speed rpm	: 1350	Ī	cm3/1000s.	: +- 3.0
nated speed i pili	, 1990	1		
Pressure hPa	: 800	+	BREAKAWAY	
rack travel mm Tolerance mm	: 13.00 : +- 0.15	1		
roceratice limit	0.15	Ţ	Rack travel in mm	: 13.90
Pressure hPa	: 300	+	Rated speed rpm	
rack travel mm	: 10.05	†	Tolerance 1/min	: +- 5
Tolerance mm	: +- 0.05	Ī		
		+		
		+	MADE OTACE OF THE	DV
FUEL DELIVERY CHA	PACTEDISTICS	1	WARM-START DELIVE	KΥ
I DEL DELIVERI CHA	IVACTEUTOITO	Į	Rated speed rpm	: 100
Aneroid pressure		+	Del. quantity	
hPa	: 1200	†	cm3/1000 strokes	: 45.0
Rated speed rpm Del. quantity	: 1200	1	Tolerance cm3/1000 strokes	· +- 10 0
cm3/1000 strokes	: 128.0	Į	Check tolerance	10.0
	<del></del>	+	cm3/1000s.	: +- 13.0

# COLD-START DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 13.0

# LOW IDLE

325 Rated speed rpm 5.60 rack travel mm Tolerance mm : + 0.10Del. quantity 20.0 cm3/1000 strokes Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000S. 4.5 Spreed Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05,12,95 Test oil : ISO 4113

Combination No. : 0 403 446 335

Injection pump

Pump designation : PES6MW100/720RS1243

EP type number : 0 413 406 243

Governor

Governer design. : RQV325...1350MW152K

Governer no. : 0 420 083 981

Cust. part No. :

Customer-spec. information

: IVECO-FIAT Customer : 8060.45.7200 Motor

: 167.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

: 1 457 413 010 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05 Check

: + 0.10tolerance mm

Rack travel in mm: 12.00 Tolerance mm : + 1.00

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300 Tolerance : + - 0.50

Check

tolerance °NW : + 0.75

BASIC SETTING

700 Rated speed rpm

Rack travel in mm: 12.60

Tolerance mm : **→** 0.05

Det. quantity

cm3/1000 strokes : 118.5

Tolerance

cm3/1000 strokes 1.0 : +-

Check tolerance cm3/1000s.: +-3.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

		+
Check tolerance cm3/1000s.	: 7.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 325	Rated speed rpm : 700 Aneroid pressure
Rack travel in mm Tolerance mm	: 5.00 : +- 0.10	hPa : 1200 Del. quantity
Del. quantity cm3/1000 strokes Tolerance	: 12.0	- cm3/1000 strokes : 118.5 - Tolerance - cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance	: +- 2.0	+ Check tolerance + cm3/1000s. : + 3.0
cm3/1000s. Spreed	; <del>+-</del> 4.5	Spreed Tolerance
Tolerance cm3/1000 strokes	: 2.0	cm3/1000 strokes : 4.5 Check tolerance
Check tolerance cm3/1000s.	: 4.5	cm3/1000s. : 7.0
	-	
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP -	CONTROL LEVER
	•	control lever
GUIDE SLEEVE TRAVE	EL -	position degree : 124.0 tolerance degree : + 4.0
Rated speed rpm guide sleeve	: 325	RATED SPEED
travel mm	: 1.83	rack travel mm : 12.00
Tolerance mm	: +- 0.20	Rated speed rpm : 1425
	-	Tolerance 1/min : + 5
Rated speed rpm	: 1412 -	<del> </del>
guide sleeve	-	rack travel mm : 4.00
travel mm	: 10.24	Rated speed rpm : 1540
Tolerance mm	: + 0.15	Tolerance 1/min : +- 15
Rated speed rpm	: 887	rack travel mm : 0.50
guide sleeve	. 5.70	Tolerance mm : + 0.50
travel mm Tolerance mm	: 5.79 : +- 0.25	Rated speed rpm : 1630
Rated speed rpm guide sleeve	: 470	- LOW IDLE
travel mm	: 3.47	-
Tolerance mm	: +- 0.25	anning Layer
Rated speed rpm guide sleeve	: 1670	- control lever - position degree : 77.0 - tolerance degree : +- 4.0
travel mm	: 13.50	Locerance degree 4.0
Tolerance mm	: + 0.50	Testing:
GUIDE SLEEVE POSIT	ION	- Rated speed rpm : 325 - rack travel mm : 5.00 - Tolerance mm : + 0.10
Rated speed rpm	: 1450	- Rated speed rpm : 200
Rack travel in mm	: 10.00	
Tolerance mm		- CRT mm min. : > 7.50

	+ Tolerance
TORQUE CONTROL	
	7/40000
Rated speed rpm : 700	+ Spreed
rack travel mm : 12.60	+ Tolerance
Tolerance mm : + 0.05	+ cm3/1000 strokes : 6.0
	+ Check tolerance
Rated speed rpm : 1200	+ cm3/1000s. : 9.0
rack travel mm : 14.25	†
Tolerance mm : +- 0.10	+ Aneroid pressure
Bu to 1 )	+ hPa : 1200
Rated speed rpm : 900 rack travel mm : 13.30 Tolerance mm : + 0.10	Rated speed rpm : 900
rack travel mm : 13.30	Del. quantity
roterance mm : - U.IU	- cm3/1000 strokes : 120.5
Rated speed rpm : 1350	Spreed Tolerance cm3/1000s trokes: 6.0 Check tolerance cm3/1000s: 9.0  Aneroid pressure hPa: 1200 Rated speed rpm: 900 Del. quantity cm3/1000 strokes: 120.5 Tolerance cm3/1000 strokes: +- 1.5 Check tolerance
	+ Check tolerance
rack travel mm : 14.25 Tolerance mm : + 0.10	+ cm3/1000s. : +- 4.0
TO COLUMN TO U. 10	T (1107 1000). 1 4.0
	Aneroid pressure
ANEROID/ALTITUDE	+ hPa : 1200
COMPENSATOR TEST	+ Rated speed rpm : 1350
	Del. quantity
	+ cm3/1000 strokes : 121.0
SETTING	Tolerance
	+ cm3/1000 strokes : +- 1.5
Rated speed rpm : 500	+ Check tolerance
Pressure hPa : 1200	+ cm3/1000s. : +- 4.0
rack travel mm : 11.80	+
Tolerance mm : +- 0.10	+ Aneroid pressure
	hPa : -
MEASUREMENT	+ Rated speed rpm : 500
	+ Del. quantity
Pressure hPa :	cm3/1000 strokes : 69.0
Rated speed rpm : 500	† Tolerance
rack travel mm : 9.10	+ cm3/1000 strokes : + 1.0
Tolerance mm : + 0.10	+ Check tolerance
500	+ cm3/1000s. : $+$ 3.0
Rated speed rpm : 500	<b>†</b>
Pressure hPa : 500	BREAKAWAY
Pressure hPa : 500 rack travel mm : 11.25	I DUCANAMAT
Tolerance mm : + 0.10	I
COLUMN . C. TO	T Rack travel in mm: 12.00
Pressure hPa : 300	Rated speed rpm : 1425
rack travel mm : 10.05	Tolerance 1/min : +- 5
olerance mm : +- 0.05	Tocordino Triniti
	1
	1
	WARM-START DELIVERY
UEL DELIVERY CHARACTERISTICS	+
	Rated speed rpm : 100
neroid pressure	+ Del. quantity
Pa : 1200	cm3/1000 strokes : 45.0
ated speed rpm : 1200	+ Tolerance
	+ cm3/1000 strokes : +- 10.0
pel. quantity	
pel. quantity m3/1000 strokes : 124.0	Check tolerance + cm3/1000s. : + 13.0

# COLD-START DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 13.0

## LOW IDLE

325 Rated speed rpm rack travel mm 5.00 : + 0.10Tolerance mm Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.12.95 Test oil : ISO 4113

Combination No. : 0 403 476 117

Injection pump

Pump designation : PES6MW100/720RS1131

: -1

EP type number : 0 413 406 165

Governor

Governer design. : RSV750...1200MW0A329

: -15

Governer no. : 0 420 085 193

Cust. part No. : 0220748502

Customer—spec. information Customer : MB-NFZ Motor : OM366LA

Power KW : 148.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1180

Rack travel in mm : 13.15

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 104.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.0

Spreed

Tolerance +	
cm3/1000 strokes : 3.5 +	control lever
-	position degree : 97.0
Check tolerance	tolerance degree : $\leftarrow$ 4.0
cm3/1000s. : 6.0	DATES ODEES
Rated speed rpm : 750	RATED SPEED
Rated speed rpm : 750	rack travel mm : 1.00
Rack travel in mm: 4.70	Tolerance mm : + 0.70
Tolerance mm : +- 0.40	Rated speed rpm : 1400
Del. quantity	Mateu specu i piii . 1400
cm3/1000 strokes : 12.0	ASSEMBLY GOVERNOR SETTING
Tolerance	
cm3/1000 strokes : + 2.0 +	Rated speed rpm : 1230
Check tolerance +	rack travel mm : 12.10
cm3/1000s. : +- 4.5 +	
Spreed +	Rated speed rpm : 1314
Tolerance +	Tolerance 1/min : + 4
cm3/1000 strokes : 3.5	rack travel mm : 4.00
Check tolerance	Date
cm3/1000s. : 5.5	Rated speed rpm : 1231 rack travel mm : 12.10
Ţ	rack travel mm : 12.10
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1315
WITH GOVERNOR	Tolerance 1/min : + 4
WITH GOVERNOR	rack travel mm : 4.00
1	
	Rated speed rpm : 1232
GUIDE SLEEVE POSITION +	rack travel mm : 12.10
+	
Rated speed rpm : 800 +	Rated speed rpm : 1316
+	Tolerance 1/min : +- 4
Rack travel in mm: 0.65	rack travel mm : 4.00
Tolerance mm : +- 0.35 +	Data d annual may
dovernos ennina	Rated speed rpm : 1233 rack travel mm : 12.10
governor spring + pre-tension +	rack travet limit . 12.10
click setting x : 4.00	Rated speed rpm : 1317
terek seeting x . 4.00	Tolerance 1/min : +- 4
	rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	
+	Rated speed rpm : 1238
Rated speed rpm : 1180 +	rack travel mm : 12.10
Aneroid pressure	
hPa : 1000 +	Rated speed rpm : 1322
Del. quantity +	Tolerance 1/min : +- 4
cm3/1000 strokes : 104.0	rack travel mm : 4.00
Tolerance + 1.0 +	Rated speed rpm : 1239
Check tolerance	Rated speed rpm : 1239 rack travel mm : 12.10
cm3/1000s. : +- 3.0	THE CHAVE CHAR . IC. IU
Spreed	Rated speed rpm : 1323
Tolerance	Tolerance 1/min : + 4
cm3/1000 strokes : 3.5	rack travel mm : 4.00
Check tolerance +	
cm3/1000s. : 6.0	
+	LOW IDLE
†	

CONTROL LEVER

aandmal lawaa		†		
control lever position degree tolerance degree	: 76.0 : + 4.0	Ŧ	FUEL DELIVERY CHA	ARACTERISTICS
Testing:		‡	Aneroid pressure	: 1000
Rated speed rpm rack travel mm Tolerance mm	: 4.70	† † †	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 97.0
rack travel mm Rated speed rpm Tolerance 1/min	: 775	† †	cm3/1000 strokes Check tolerance cm3/1000s. Spreed	
Rated speed rpm	: 100	‡	Tolerance cm3/1000 strokes	: 5.0
CRT mm min.	: > 19.00	‡	Check tolerance cm3/1000s.	: 7.0
TORQUE CONTROL		<del> </del>	Aneroid pressure hPa Rated speed rpm	: – : 500
Rated speed rpm rack travel mm Tolerance mm	: 13.15	+++++++++++++++++++++++++++++++++++++++	Del. quantity cm3/1000 strokes Tolerance	
Rated speed rpm rack travel mm Tolerance mm	: 13.15	† †	cm3/1000 strokes Check tolerance cm3/1000s.	
ANEROID/ALTITUDE COMPENSATOR TEST SETTING			STARTING FUEL DEL Rated speed rpm Del. quantity	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1000 : 13.15	† † †	cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 5.0
MEASUREMENT		<u> </u>		
Pressure hPa Rated speed rpm Tolerance mm	: 500 : + 0.10	+	LOW IDLE	: 750
Rated speed rpm	: 500	Ŧ	Rated speed rpm rack travel mm Tolerance mm	: 4.70 : + 0.40
Pressure hPa rack travel mm Tolerance mm	: 500 : 2.20 : ← 0.15	+	Del. quantity cm3/1000 strokes Tolerance	: 12.0
Pressure hPa rack travel mm Tolerance mm	: 350 : 1.10 : +- 0.05	+++++++++++++++++++++++++++++++++++++++	cm3/1000 strokes Check tolerance cm3/1090s. Spreed	: +- 2.0 : +- 4.5
		‡	Tolerance cm3/1000 strokes	: 3.5

Check tolerance cm3/1000s.	:	5.5	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07,12,95 : ISO 4113

Combination No. : 0 400 836 021

Injection pump

Pump designation : PES6A80D410/3RS2527

EP type number : 0 410 886 059

Governor

Governer design. : RQV300...1400AB951DL

Governer no. : 0 420 214 215

Cust. part No.

Customer-spec. information

: KHD Customer Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

1.95 Prestroke mm : +- 0.05

Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 : **←** 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.50Tolerance

Check

tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 12.05

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 69.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s.

: +- 2.0

Spreed

Tolerance

cm3/1000 strokes :

2.5

Check tolerance	+ Del. quantity
cm3/1000s. : 4.0	+ cm3/1000 strokes : 69.5
	+ Tolerance
Rated speed rpm : 300	+ cm3/1000 strokes : + 0.5
	+ Check tolerance
Rack travel in mm : 6.00	+ cm3/1000s. : + 2.0
	+ Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 12.0	cm3/1000 strokes : 2.5
Tolerance	+ Check tolerance
cm3/1000 strokes : + 1.5	+ cm3/1000s. : 4.0
Check tolerance	+
cm3/1000s. : $+$ 3.5	+
Spreed	<u> </u>
Tolerance	→ CONTROL LEVER
cm3/1000 strokes : 4.0	4
Check tolerance	+ control lever
cm3/1000s. : 6.0	position degree : 103.0
. 0.0	tolerance degree : + 4.0
	L toter ance degree 4.0
(D) CETTING OF TAUCCTION DUMP	DATES COMES
(B) SETTING OF INJECTION PUMP	RATED SPEED
WITH GOVERNOR	<b>†</b>
	+ rack travel mm : 11.00
	Rated speed rpm : 1445
GUIDE SLEEVE TRAVEL	† Tolerance 1/min : + 5
	+
Rated speed rpm : 300	+ rack travel mm : 4.00
guide sleeve	+ Rated speed rpm : 1550
travel mm : 1.20	Tolerance 1/min : + 15
Tolerance mm : + 0.15	1
	·
	L rack travel mm · Ω5Ω
Pated speed rom . 1/5/	+ rack travel mm : 0.50
Rated speed rpm : 1454	Tolerance mm : + 0.50
guide sleeve	
guide sleeve travel mm : 8.60	Tolerance mm : + 0.50
guide sleeve	Tolerance mm : + 0.50
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15	Tolerance mm : + 0.50 Rated speed rpm : 1700
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970	Tolerance mm : + 0.50
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve	Tolerance mm : + 0.50 Rated speed rpm : 1700
guide sleeve travel mm : 8.60 Tolerance mm : 70.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing: Rated speed rpm : 300
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing: Rated speed rpm : 300
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50
guide sleeve travel mm : 8.60 Tolerance mm : + 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50  Rated speed rpm : 495
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1400	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50  Rated speed rpm : 495  TORQUE CONTROL
guide sleeve travel mm : 8.60 Tolerance mm : → 0.15  Rated speed rpm : 970 guide sleeve travel mm : 5.00 Tolerance mm : + 0.25  Rated speed rpm : 1720 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1440  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Tolerance mm : + 0.50 Rated speed rpm : 1700  LOW IDLE  control lever position degree : 50.0 tolerance degree : + 4.0  Testing:  Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 7.50  Rated speed rpm : 495

rack travel mm Tolerance mm	: 12.05 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.85 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1045 : 12.70 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 12.40 : ← 0.10
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min Check	: > 80
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	700
Del. quantity cm3/1000 strokes	: 65.5
Tolerance	
cm3/1000 strokes Check tolerance	: <del>+</del> 1.5
cm3/1000s.	: +- 3.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 11.00 : 1445 : + 5
STARTING FUEL DELI	IVERY
Rated speed rpm rack travel mm Tolerance mm	: 100 : 17.45 : + 0.15
OU TO E	

Rated speed rpm rack travel mm Tolerance mm	: : : +-	300 6.00 0.10
Del. quantity cm3/1000 strokes	;	12.0
Tolerance cm3/1000 strokes	: +-	1.5
Check tolerance cm3/1000S. Spreed	: +-	3.5
Tolerance cm3/1000 strokes	:	4.0
Check tolerance cm3/1000s.	:	6.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 11.12.95 Edition : ISO 4113 Test oil Combination No. : 0 400 876 430 Injection pump Pump designation : PES6A95D41ORS2864 EP type number : 0 410 896 888 Governor Governer design. : RSV400...1050A2C2263 : -10L : 0 420 232 619 Governer no. Cust. part No. : 87 800 862 Customer-spec, information : FNH-GEOTECH Customer : P 396 Motor Power KW : 142.0 TEST BENCH REQUIREMENTS Inlet line : 1.3 Test oil inlet temp. °C : +- 2.0 Tolerance °C Overflow valve : 1 419 992 198 Inlet press. bar : 1.5 Test nozzle holde : 1 688 901 101 assembly Opening pressure 208.5 1.5 Tolerance bar

: 1 680 750 008

6.0

x inside diameter : 2.0 x length mm : 600 REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____ BEGINNING OF DELIVERY Test pressure bar : 26.0 Tolerance bar : +- 1.0 Prestroke mm 2.60 : + 0.05Tolerance mm Check tolerance mm : + 0.10Rack travel in mm: 10.50 : +- 1.50 Tolerance mm : 1-5-3-6-2-Firing order : 4 : 0-60-120-180-240 Phasing : -300 BASIC SETTING Rated speed rpm 750 Rack travel in mm: 15.00 Tolerance mm : +- 0.05 Del. quantity cm3/1000 strokes : 154.0 Tolerance cm3/1000 strokes 1.0 : +-Check tolerance cm3/1000s. 3.0 Spreed Tolerance 3.5 cm3/1000 strokes : Check tolerance cm3/1000s. 8.0

Test lines

Outside diameter :

	1
Rated speed rpm : 450	ASSEMBLY GOVERNOR SETTING
Rack travel in mm : 5.70 Tolerance mm : +- 0.10	Rated speed rpm : 1093 rack travel mm : 12.40
Del. quantity cm3/1000 strokes : 15.0 Tolerance	Rated speed rpm : 1163 Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	+ rack travel mm : 4.00
cm3/1000s. : +- 4.5 Spreed Tolerance	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
cm3/1000 strokes : 5.5 Check tolerance	Rated speed rpm : 1094 rack travel mm : 12.40
cm3/1000s. : 9.0	Rated speed rpm : 1164 Tolerance 1/min : + 5
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00
	rack travel mm : 0.85 Tolerance mm : + 0.55
GUIDE SLEEVE POSITION	Rated speed rpm : 1095 rack travel mm : 12.40
Rated speed rpm : 800  Rack travel in mm : 0.50	Rated speed rpm : 1165 Tolerance 1/min : + 5
Tolerance mm : + 0.20	rack travel mm : 4.00
governor spring pre-tension click setting x : 4.00	rack travel mm : 0.85 Tolerance mm : + 0.55
	Rated speed rpm : 1096 rack travel mm : 12.40
FULL LOAD DELIVERY AT FULL LOAD STO	+ Rated speed rpm : 1166
Rated speed rpm : 750 Aneroid pressure hPa : 1200	Tolerance 1/min : +- 5 rack travel mm : 4.00
Del. quantity cm3/1000 strokes : 154.0	rack travel mm : 0.85 Tolerance mm : + 0.55
Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 1097 rack travel mm : 12.40
cm3/1000s. : + 3.0 Spreed	Rated speed rpm : 1167 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : 3.5 Check tolerance	Tolerance 1/min : + 5 rack travel mm : 4.00
cm3/1090S. : 8.0	rack travel mm : 0.85 Tolerance mm : + 0.55
CONTROL LEVER	Rated speed rpm : 1098 rack travel mm : 12.40
control lever position degree : 93.0 tolerance degree : + 4.0	Rated speed rpm : 1168 Tolerance 1/min : +- 5 rack travel mm : 4.00

rack travel mm Tolerance mm	: 0.85 : + 0.55	MEASUREMENT
LOW IDLE		Pressure hPa : - Rated speed rpm : 500 rack travel mm : 9.30 Tolerance mm : + 0.05
control lever position degree tolerance degree	: 72.0 : + 4.0	Rated speed rpm : 500
Setting point w/d	out bumper spring	Pressure hPa : 750 rack travel mm : 13.70 Tolerance mm : +- 0.05
Rated speed rpm rack travel mm	: 450 : 5.20	+ Pressure hPa : 500
Testing:		+ rack travel mm : 11.40 + Tolerance mm : +- 0.20
Rated speed rpm rack travel mm Tolerance mm	: 450 : 5.70 : +- 0.10	+
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 590	FUEL DELIVERY CHARACTERISTICS  Aneroid pressure  hPa : -  Rated speed rpm : 500
TORQUE CONTROL		- + Del. quantity + cm3/1000 strokes : 76.5
Rated speed rpm rack travel mm Tolerance mm	: 15.00	+ Tolerance + cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000S. : +- 3.0
Rated speed rpm rack travel mm Tolerance mm	: 500 : 15.15 : + 0.10	
Rated speed rpm rack travel mm Tolerance mm	: 12.90	STARTING FUEL DELIVERY  Rated speed rpm : 100  rack travel mm : 20.00  Tolerance mm : +- 0.20
Rated speed rpm rack travel mm Tolerance mm	: 13.40	Del. quantity cm3/1000 strokes : 165.0 Tolerance cm3/1000 strokes : + 8.0
Rated speed rpm rack travel mm Tolerance mm		Check tolerance : + 11.0
ANEROID/ALTITUDE COMPENSATOR TEST		LOW IDLE
SETTING		Rated speed rpm : 450 rack travel mm : 5.70 Tolerance mm : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 15.15 : +- 0.10	Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : + 2.0

Check tolerance cm3/1000S. Spreed	; +-	4.5
Tolerance cm3/1000 strokes Check tolerance	:	5.5
cm3/1000s.	:	9.0

End of test specification sheet

800

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.12.95 Test oil : ISO 4113

Combination No. : 0 401 849 757

Injection pump

Pump designation: PE10P120A520/4LS3863

EP type number : 0 411 897 711

Governor

Governer design. : RQ300/900PA1230

Governer no. : 0 421 801 792

Cust. part No. :

Customer—spec. information Customer : DAEWOO Motor : D2840LE

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.05 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 10-9-4-1-8

: - 7- 6- 3- 5

: - 2

Phasing : 0-45-72-117-144

: -189-216-261-288

: -333

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance *NW : + 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.90

Tolerance mm	: +- 0.05	1
10ter di lee likir	• • • • • • • • • • • • • • • • • • • •	Rated speed rpm : 510
Del. quantity		guide sleeve
cm3/1000 strokes	: 208.0	travel mm : 6.00
CIID/1000 Strokes	: 200.0	
		Tolerance mm : + 0.10
Tolerance		<b>†</b>
cm3/1000 strokes	: <del></del> 1.0	+ Rated speed rpm : 1050
		🕂 guide sleeve
Check tolerance		+ travel mm : 11.50
cm3/1000s.	: +- 4.0	+ Tolerance mm : + 0.50
Spreed		
Tolerance		GUIDE SLEEVE POSITION
cm3/1000 strokes	: 6.0	A GOINE SEEFAF LOSTLION
CIIDY TODO STITURES	. 0.0	Total aread pro . (00
		+ Rated speed rpm : 600
Check tolerance	40.0	†
cm3/1000s.	: 10.0	+ Rack travel in mm : 20.00
		+ Tolerance mm : +- 0.80
Rated speed rpm	: 300	+
•		+
Rack travel in mm	n: 7.00	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance mm	: +- 0.30	
Del. quantity		+ Rated speed rpm : 850
cm3/1000 strokes	: 24.0	
	: 24.0	+ Aneroid pressure
Tolerance		+ hPa : -
cm3/1000 strokes	: <del></del> 3.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 208.0
cm3/1000s.	: +- 6.0	+ Tolerance
Spreed		+ cm3/1000 strokes : +- 1.0
Tolerance		+ Check tolerance
cm3/1000 strokes	: 7.0	+ cm3/1000s. : + 4.0
Check tolerance	. 7.0	Spreed
	. 11 0	
cm3/1000s.	: 11.0	+ Tolerance
		+ cm3/1000 strokes : 6.0
		+ Check tolerance
(B) SETTING OF IN	NECTION PUMP	+  cm3/1000s. : 10.0
WITH GOVERNOR		+
		1
GUIDE SLEEVE TRAV	/FI	+ CONTROL LEVER
doing occur that		J JOHN TO LEVEN
Rated speed rpm	: 300	f control lever
	. 500	
guide sleeve	. 1 //	position degree : 32.0
travel mm	: 1.44	tolerance degree : +- 4.0
Tolerance mm	: <del>+-</del> 0.10	<del></del>
		+ control lever
Rated speed rpm	: 932	→ position degree : 94.0
guide sleeve		+ tolerance degree : +- 4.0
travel mm	: 6.37	
Tolerance mm	: + 0.10	+ RATED SPEED
TOTAL TOTAL	0.,0	1
Dottod apped app	: 880	Track travel mm : 11.90
Rated speed rpm	. 000	
guide sleeve		Rated speed rpm : 925
travel mm	: 6.00	† Tolerance 1/min : +- 5
Tolerance mm	: +- 0.10	+
		+ rack travel mm : 4.00
Rated speed rpm	: 433	+ Rated speed rpm : 970
		+ Tolerance 1/min : + 15
aude sleeve		
guide sleeve	• /4 0/.	T rocerance rounts 13
travel mm	: 4.94	+
	: 4.94 : + 0.10	rack travel mm : 0.50

: **←** 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 212.0 Rated speed rpm : 1100 Tolerance cm3/1000 strokes : +-3.0 Check tolerance LOW IDLE cm3/1000s. : +-6.0 control lever BREAKAWAY position degree : 74.0 tolerance degree : +- 4.0 Rack travel in mm : 11.90 control lever Rated speed rpm : position degree : 12.0 Tolerance 1/min : +tolerance degree : +- 4.0 Testing: STARTING FUEL DELIVERY Rated speed rpm 300 : 7.00 Del. quantity rack travel mm : +- 0.10 cm3/1000 strokes : 200.0 Tolerance mm Tolerance rack travel mm 2.00 cm3/1000 strokes : + 20.0Rated speed rpm 415 Check tolerance Tolerance 1/min 20 cm3/1000s. : +- 24.0 Rated speed rpm 200 : CRT mm min. : > 9.40 LOW IDLE TORQUE CONTROL 300 Rated speed rpm 7.00 rack travel mm : +- 0.30 Rated speed rpm 850 Tolerance mm rack travel mm 12.90 Del. quantity 24.0 Tolerance mm : +- 0.05 cm3/1000 strokes : Tolerance 3.0 : 650 cm3/1000 strokes : +-Rated speed rpm rack travel mm 12.90 Check tolerance cm3/1000s. 6.0 : + 0.10: +-Tolerance mm Spreed Tolerance cm3/1000 strokes : 7.0 START CUT-OUT Check tolerance 11.0 cm3/1000s. 100 Rated speed rpm : > Rated speed rpm ; < 220 Check speed 1/min : > 80 Check : < End of test specification sheet speed 1/min 240 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa

Rated speed rpm :

650

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 08.12.95 Test oil : ISO 4113 Combination No. : 0 401 876 793 Injection pump Pump designation : PE6P120A320RS3314 EP type number : 0 411 826 806 Governor Governer design. : RSV350...1100P1A559 : 0 421 833 389 Governer no. Cust. part No. : 1342534 Customer-spec. information Customer : SCANIA : D9 Motor TEST BENCH REQUIREMENTS Inlet line Vibration damper (RoBo diaphragm) : 4.2 Test oil inlet temp. °C 40 Tolerance °C 2.0 Overflow valve : 1 417 413 025 Inlet press. bar : 2.5 Tolerance bar : + 0.1

: 1 688 901 104

251.5

: + 1.5

Outside diameter : 6.0 x inside diameter: 2.0 600 x length mm : REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values ____ BEGINNING OF DELIVERY Test pressure bar : 26.0 Tolerance bar : + 1.0 Prestroke mm : 4.45 : +- 0.05 Tolerance mm Check tolerance mm : + 0.10 Rack travel in mm: 10.50 Tolerance mm : + 1.50 Firing order : 1-5-3-6-2-Phasing : 0-60-120-180-240 : -300 Tolerance : +- 0.30 Check tolerance °NW : +- 0.50 Start of delivery mark Barrel no. : 1 BASIC SETTING Rated speed rpm : 700 Rack travel in mm: 11.45 Tolerance mm :  $\leftarrow$  0.05 Del. quantity cm3/1000 strokes : 152.0

Test Lines : 1 680 750 008

bar

Test nozzle holde

Opening pressure

Tolerance bar

assembly

	+ Tolerance
Tolerance	+ cm3/1000 strokes : 8.0
cm3/1000 strokes : + 1.0	+ Check tolerance
	+ cm3/1000s. : 12.0
Check tolerance	+
cm3/1000s. : +- 4.0	+
Canad	CONTROL LEVED
Spreed Tolerance	CONTROL LEVER
cm3/1000 strokes : 8.0	T control lever
	+ position degree : 40.0
Check tolerance	+ tolerance degree : + 4.0
cm3/1000s. : 12.0	†
	control lever
Rack travel in mm : 5.20	+ position degree : 90.0 + tolerance degree : +- 4.0
Tolerance mm : + 0.10	T total ance degree : 4.0
Del. quantity	4
cm3/1000 strokes : 18.0	ASSEMBLY GOVERNOR SETTING
Tolerance	+
cm3/1000 strokes : +- 4.0	Rated speed rpm : 750 rack travel mm : 10.45
Check tolerance cm3/1000s. : +- 6.0	rack travel mm : 10.45
Spreed	Rated speed rpm : 788
Tolerance	+ Tolerance 1/min : + 4
cm3/1000 strokes : 5.0	+ rack travel mm : 4.00
Check tolerance	+
cm3/1000s. : 9.0	rack travel mm : 0.85
	+ Tolerance mm : +- 0.55 + Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP	+ Rated speed (piii) : 050
WITH GOVERNOR	Rated speed rpm : 751
	+ rack travel mm : 10.45
	+
CUTAE OF FEUE DOCUTION	Rated speed rpm : 789 Tolerance 1/min : +- 4
GUIDE SLEEVE POSITION	+ Tolerance 1/min : +- 4 + rack travel mm : 4.00
Rated speed rpm : 800	1 400 2.4402 11811
	rack travel mm : 0.85
Rack travel in mm: 0.50	Tolerance mm : +- 0.55
Tolerance mm : + 0.20	+ Rated speed rpm : 850
dovonnon ennind	+ Rated speed rpm : 752
governor spring pre-tension	+ rack travel mm : 10.45
click setting x : 3.50	
•	Rated speed rpm : 790
	Tolerance 1/min : + 4
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 4.00
Rated speed rpm : 700	rack travel mm : 0.85
Aneroid pressure	+ Tolerance mm : + 0.55
hPa : -	Rated speed rpm : 850
Del. quantity	+
cm3/1000 strokes : 152.0	Rated speed rpm : 753
Tolerance	rack travel mm : 10.45
cm3/1000 strokes : +- 1.0 Check tolerance	Rated speed rpm : 791
cm3/1000s. : +- 4.0	
	+ Tolerance 1/min : +- 4
Spreed -	Tolerance 1/min : +- 4 rack travel mm : 4.00

rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 850
Rated speed rpm	: 754
rack travel mm	: 10.45
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 10.45
Rated speed rpm	: 793
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
TORQUE CONTROL	
Rated speed rpm	: 700
rack travel mm	: 11.45
Tolerance mm	: + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 500
Pressure hPa	: 1500
rack travel mm	: 11.45
Tolerance mm	: ← 0.05

500

500

180

250

: ← 0.15

10.50

: +- 0.20

10.00

rack travel mm Tolerance mm	: 10.95 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 500 : 116.0 : + 1.0 : + 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: + 20.0 : + 24.0

End of test specification sheet

**MEASUREMENT** 

Pressure hPa

Tolerance mm

Pressure hPa

Tolerance mm

Pressure hPa

rack travel mm

Rated speed rpm

rack travel mm

Rated speed rpm

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.12.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 044 700

Injection pump

Pump designation : PES4P110A320RS3350

EP type number : 0 412 014 700

Governor

Governer design. : RQV350...1400PA1221K

Governer no. : 0 421 815 472

Cust. part No. : 16700-D8703 / M

: -2004

Customer-spec. information : NMI Customer

: B4.40 EURO II Motor

: 101.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : +-0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar 1.5

: 1 680 750 008 Test lines

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.55

Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50

: **←** 0.50 Tolerance mm

: 4-2-1-3 Firing order

: 0-90-180-270 Phasing

: + 0.30Tolerance

Check

: + 0.50tolerance "NW

Start of delivery mark

°NW after s.o.d. : 180.00

: + - 0.50Tolerance

Check

: +- 0.75 tolerance °NW

Barrel no. : 4

BASIC SETTING

Rated speed rpm 1300

Rack travel in mm: 15.40

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 178.0

		+ Tolerance mm : + 0.50
Tolerance cm3/1000 strokes	: + 1.0	CHARE SHEETE DOCUTION
Check tolerance cm3/1000s.	: + 3.0	GUIDE SLEEVE POSITION Rated speed rpm : 1515
Spreed Tolerance		Rack travel in mm: 14.50 Tolerance mm: + 1.30
cm3/1000 strokes	: 5.0	
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 350	Rated speed rpm : 1300 Aneroid pressure hPa : 1500
Rack travel in mm Tolerance mm	9.50 : +- 0.30	Del. quantity cm3/1000 strokes : 178.0
Del. quantity cm3/1000 strokes	: 31.0	Tolerance + cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes	: +- 2.5	Check tolerance cm3/1000s. : + 3.0
Check tolerance cm3/1000S. Spreed	: +- 5.0	+ Spreed + Tolerance + cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes	: 6.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000S.	: 10.0	+
		4-
(B) SETTING OF IN	JECTION PHMP	CONTROL LEVER
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP	control lever position degree : 65.0
		control lever position degree : 65.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAV Rated speed rpm guide sleeve	EL : 350	- control lever - position degree : 65.0
GUIDE SLEEVE TRAV	EL	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	EL : 350 : 1.46 : +- 0.20 : 1417	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	EL : 350 : 1.46 : +- 0.20	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410 Tolerance 1/min : + 5
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	EL : 350 : 1.46 : +- 0.20 : 1417 : 9.99	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Rated speed rpm	EL : 350 : 1.46 : +- 0.20 : 1417 : 9.99 : +- 0.15	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1585 Tolerance 1/min : + 15  rack travel mm : 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	EL : 350 : 1.46 : +- 0.20 : 1417 : 9.99 : +- 0.15 : 994 : 6.77	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1585 Tolerance 1/min : + 15
WITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm Tolerance mm	EL : 350 : 1.46 : + 0.20 : 1417 : 9.99 : + 0.15 : 994 : 6.77 : + 0.25	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1585 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1640
GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	EL : 350 : 1.46 : +- 0.20 : 1417 : 9.99 : +- 0.15 : 994 : 6.77 : +- 0.25 : 610 : 3.96	control lever position degree : 65.0 tolerance degree : + 4.0  control lever position degree : 122.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 14.40 Rated speed rpm : 1410 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1585 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50

control lever position degree tolerance degree control lever position degree tolerance degree	: +- 4.0 : 26.0	Pressure hPa : 940  rack travel mm : 14.45  Tolerance mm : + 0.10  Pressure hPa : 520  rack travel mm : 13.25  Tolerance mm : + 0.05
Testing:		
Rated speed rpm rack travel mm Tolerance mm	: 9.50	START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : > 270
Rated speed rpm	: 250	Check
CRT mm min.	: > 10.80	+ speed 1/min : > 80 + Check
Rated speed rpm	: 500	+ speed 1/min : > 290
TODOLE CONTROL		FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		+ Aneroid pressure
Rated speed rpm	: 1300	+ hPa : 1500
rack travel mm		+ Rated speed rpm : 780
Tolerance mm	: <del>+-</del> 0.05	+ Del. quantity + cm3/1000 strokes : 154.0
Rated speed rpm	• 780	Tolerance
rack travel mm		+ cm3/1000 strokes : + 2.0
Tolerance mm		† Check tolerance
		+ cm3/1000s. : +- 5.0
Rated speed rpm		+ Spreed
rack travel mm Tolerance mm		+ Tolerance + cm3/1000 strokes : 12.0
TOCCI GITCC TIKE	0.20	+ Check tolerance
Rated speed rpm	: 1250	+ cm3/1000s. : 16.0
rack travel mm Tolerance mm	: 15.40	+
Tolerance mm	: +- 0.10	+ Aneroid pressure + hPa : 1500
		+ hPa : 1500 + Rated speed rpm : 1000
ANEROID/ALTITUDE		Del. quantity
COMPENSATOR TEST		+ cm3/1000 strokes : 165.0
		+ Tolerance
SETTING		+ cm3/1000 strokes : + 3.0 + Check tolerance
OLI I LIVO		- cm3/1000s. : +- 6.0
Rated speed rpm	: 1300	+
Pressure hPa	: 1500	+ Aneroid pressure
rack travel mm Tolerance mm	: 15.40	+ hPa : - Rated speed rpm : 500
loterance mm	: + 0.10	+ Rated speed rpm : 500 + Del. quantity
MEASUREMENT		+ cm3/1000 strokes : 136.0
Pressure hPa	• -	+ Tolerance + cm3/1000 strokes : +- 1.0
Rated speed rpm	1300	Check tolerance
rack travel mm	: 12.75	+  cm3/1000s. : + 4.0
Tolerance mm	: + 0.10	+
Rated speed rpm	: 1300	BREAKAWAY

Rack travel in mm: 14.40
Rated speed rpm: 1410
Tolerance 1/min: +- 5

### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 200.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

## LOW IDLE

350 Rated speed rpm 9.50 rack travel mm : + 0.30Tolerance mm Del. quantity cm3/1000 strokes : 31.0 Tolerance 2.5 cm3/1000 strokes : +-Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 08.12.95 Edition Test oil : ISO 4113

Combination No. : 0 402 046 864

Injection pump

Pump designation: PES6P12DA32ORS3337

: -1

: 0 412 026 772 EP type number

Governor

Governer design. : RQV300...1250PA1149

: -1K

: 0 421 815 421 Governer no.

Cust. part No. : CCEP 5142A 66-219

Customer-spec. information

: RVI Customer

: MIDR 06-02-26 W4 Motor

Power KW : 155.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 : **←** 1.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

#### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

4.15 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 13.00 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

: ← 0.50 Tolerance

Check

: + 0.75tolerance °NW

Barrel no. 1

## BASIC SETTING

Rated speed rpm : 1250

13.15 Rack travel in mm :

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 202.5

Tolerance cm3/1000 strokes	: +- 1.0	†
Check tolerance cm3/1000s.	: +- 4.0	GUIDE SLEEVE POSITION Rated speed rpm : 1400
Spreed Tolerance cm3/1000 strokes	: 5.0	Rack travel in mm: 12.15 Tolerance mm: + 1.30
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 300	+ Rated speed rpm : 1250 + Aneroid pressure + hPa : 1000
Rack travel in m Tolerance mm Del. quantity		Del. quantity cm3/1000 strokes : 202.5 Tolerance
cm3/1000 strokes Tolerance		cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.		- cm3/1000S. : +- 4.0 - Spreed - Tolerance
Spreed Tolerance cm3/1000 strokes	•	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s.		- CM3/10005. : 9.0
(B) SETTING OF IN	NJECTION PUMP	control lever position degree : 296.0
GUIDE SLEEVE TRAN	VEL -	tolerance degree : +- 4.0  RATED SPEED
Rated speed rpm guide sleeve travel mm	: 1.31	rack travel mm : -1.00 Rated speed rpm : 1312
Tolerance mm Rated speed rpm	-	+ Tolerance 1/min : +- 5 + rack travel mm : -9.20
guide sleeve travel mm Tolerance mm	: 9.98 - : + 0.15 -	Rated speed rpm : 1440 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	<u>-</u>	rack travel mm : -12.65 Tolerance mm : +- 0.50 Rated speed rpm : 1550
travel mm Tolerance mm	: 6.02 : ← 0.25	Nated Speed 1 pin . 1330
Rated speed rpm guide sleeve	-	LOW IDLE
travel mm Tolerance mm	: 3.59 : +- 0.25	control lever position degree : 245.0
Rated speed rpm guide sleeve	<del>-</del>	tolerance degree : +- 4.0
travel mm Tolerance mm	: 13.50 : +- 0.50	Testing:

Rated speed rpm rack travel mm Tolerance mm	: -8.20	Check speed 1/min : < 260
Rated speed rpm	: 200	FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: < -7.40	Aneroid pressure hPa : 1000
Rated speed rpm	: 490	Rated speed rpm : 850 Del. quantity cm3/1000 strokes : 144.0
TORQUE CONTROL		+ Tolerance + cm3/1000 strokes : +- 3.0
Rated speed rpm	: 1250	+ cm3/1000s: + 5.0 + cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolemance mm	: -1.85	Aneroid pressure
Rated speed rpm rack travel mm	: 350 : -1.60	Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 127.5
Tolerance mm		Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000s. : + 4.0
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm	: 1000	Rack travel in mm: -1.00 Rated speed rpm: 1312 Tolerance 1/min: + 5
MEASUREMENT		
Pressure hPa Rated speed rpm rack travel mm	<b>:</b> −3.40	STARTING FUEL DELIVERY  Rated speed rpm : 100
Tolerance mm	: +- 0.20	Del. quantity cm3/1000 strokes : 102.0
Rated speed rpm Pressure hPa	: 1000 : 240	Tolerance cm3/1000 strokes : +- 15.0 Check tolerance
rack travel mm Tolerance mm	: -2.55 : +- 0.10	cm3/1000s. : +- 19.0
Pressure hPa rack travel mm Tolerance mm	: 320 : -1.80 : + 0.05	LOW IDLE
		Rated speed rpm : 300
START CUT-OUT Rated speed rpm	: > 175	+ rack travel mm : -8.20 + Tolerance mm : +- 0.20 + Del. quantity
Rated speed rpm		cm3/1000 strokes : 28.0 Tolerance
Check speed 1/min	: > 155	cm3/1000 strokes : +- 2.0 Check tolerance
		+ cm3/1000s. : + 5.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W480/...

Edition : 06.12.95 Test oil : ISO 4113

Combination No. : 0 402 046 877

Injection pump

Pump designation : PES6P12OA32ORS3337

: -1

EP type number : 0 412 026 772

Governor

Governer design. : RQV300...1250PA1149

: -2K

Governer no. : 0 421 815 504

Cust. part No. : CCEP 5158 66-218

Customer-spec. information

Customer : RVI

Motor : MIDR 06-02-26 V4

Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.15 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 13.00

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  : + 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 12.60

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 150.5

Tolerance cm3/1000 strokes	: <del>+</del> 1.0	<u> </u>
		GUIDE SLEEVE POSITION
Check tolerance cm3/1000s.	: +- 4.0	Rated speed rpm : 1395
Spreed Tolerance cm3/1000 strokes	: 5.0	Rack travel in mm: 11.60 Tolerance mm: + 1.30
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 300	Rated speed rpm : 1250 Aneroid pressure hPa : 1000
Rack travel in mm Tolerance mm Del. quantity		Del. quantity cm3/1000 strokes : 150.5 Tolerance
cm3/1000 strokes Tolerance		cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 5.0	cm3/1000s. : + 4.0 Spreed Tolerance
Spreed Tolerance	; +- 5.0	- cm3/1000 strokes : 5.0 - Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.		cm3/1000s. : 9.0
	• •	CONTROL LEVER
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	control lever position degree : 293.0
GUIDE SLEEVE TRAVE	<u> </u>	tolerance degree : + 4.0  RATED SPEED
Rated speed rpm guide sleeve travel mm	: 300 -	rack travel mm : -1.00 Rated speed rpm : 1296
Tolerance mm	: +- 0.20	Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm	: 1311 - : 9.80 -	+ rack travel mm : -8.60 + Rated speed rpm : 1426 + Tolerance 1/min : +- 15
Tolerance mm	; <del>+-</del> 0.15	rack travel mm : -12.10
Rated speed rpm guide sleeve travel mm	: 868 - : 5.97 -	Tolerance mm : +- 0.50 Rated speed rpm : 1550
Tolerance mm	: + 0.25	
Rated speed rpm	: 510	+ LOW IDLE
guide sleeve travel mm	-	<del> </del>
travel mm Tolerance mm	: 3.59 : +- 0.25	control lever position degree : 241.0
travel mm	: 3.59	

Rated speed rpm rack travel mm Tolerance mm	: 300 : -8.30 : + 0.10	Check speed 1/min : < 245
Rated speed rpm	: 200	FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: < <del>-6</del> .67	Aneroid pressure hPa : 1000
Rated speed rpm	: 400	Rated speed rpm : 850 Del. quantity
TORQUE CONTROL		+ cm3/1000 strokes : 126.0 + Tolerance
Rated speed rpm	: 1250	cm3/1000 strokes : + 3.0 + Check tolerance + cm3/1000s. : + 6.0
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: -1.85 : ← 0.15 : 350 : -2.70	Aneroid pressure  hPa : - Rated speed rpm : 1000  Del. quantity cm3/1000 strokes : 124.5 Tolerance cm3/1000 strokes : +- 1.0
ANEROID/ALTITUDE COMPENSATOR TEST		+ Check tolerance + cm3/1000S. : ← 4.0
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm MEASUREMENT	: 1000	Rack travel in mm: -1.00 Rated speed rpm: 1296 Tolerance 1/min: + 5
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: -2.45 : +- 0.20	STARTING FUEL DELIVERY  Rated speed rpm : 100  Del. quantity cm3/1000 strokes : 108.0  Tolerance cm3/1000 strokes : +- 15.0
Pressure hPa rack travel mm Tolerance mm Pressure hPa	: 160 : -2.15 : + 0.10 : 280	Check tolerance cm3/1000s. : +- 19.0
rack travel mm Tolerance mm	: -1.20 : +- 0.05	LOW IDLE
START CUT-OUT Rated speed rpm		Rated speed rpm : 300 rack travel mm : -8.30 Tolerance mm : +- 0.20 Del. quantity
Rated speed rpm Check		+ cm3/1000 strokes : 26.0 + Tolerance + cm3/1000 strokes : +- 2.0
speed 1/min	: > 80	Check tolerance + cm3/1000s. : +- 5.0

Spreed Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. 12.0

End of test specification sheet

D26

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 27.10.95 Test oil : ISO 4113

Combination No. : 0 402 076 762

Injection pump

Pump designation : PES6P12DA72ORS3322 EP type number : 0 412 026 764

Governor

Governer design. : RSV650...1250P8A567

: -1

Governer no. : 0 421 833 422

Cust. part No. :

Customer-spec. information

Customer : FNH-GEOTECH

Power KW : 179.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 105 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Check

tolerance °NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.70 - Tolerance mm : + 0.05 -	Check tolerance - cm3/1000s. : +- 4.0 - Spreed - Tolerance
Del. quantity - cm3/1000 strokes : 137.5 -	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Tolerance - cm3/1000 strokes : + 1.0 -	
Check tolerance cm3/1000s. : +- 4.0	CONTROL LEVER control lever
Spreed Tolerance cm3/1000 strokes : 5.0	position degree : 111.0 tolerance degree : +- 4.0 RATED SPEED
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 1330
Del. quantity - cm3/1000 strokes : 21.0	ASSEMBLY GOVERNOR SETTING
Tolerance - cm3/1000 strokes : +- 3.0 - Check tolerance -	Rated speed rpm : 1293 - rack travel mm : 9.65
cm3/1000s. : +- 6.0 Spreed Tolerance	Rated speed rpm : 1325 Tolerance 1/min : + 5 rack travel mm : 4.00
cm3/1000 strokes : 8.0 - Check tolerance -	rack travel mm : 0.85
	- Rated speed rpm : 1500
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1294 - rack travel mm : 9.65
GUIDE SLEEVE POSITION	- Rated speed rpm : 1326 - Tolerance 1/min : +- 5 - rack travel mm : 4.00
Rated speed rpm : 800	- rack travel mm : 0.85
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	Tolerance mm : + 0.55 Rated speed rpm : 1295
governor spring	- rack travel mm : 9.65
pre-tension click setting x : 3.50	- Rated speed rpm : 1327 - Tolerance 1/min : +- 5 - rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	- rack travel mm : 0.85 - Tolerance mm : + 0.55
Rated speed rpm : 1250 Aneroid pressure hPa : 1500	- - Rated speed rpm : 1296 - rack travel mm : 9.65
Del. quantity + cm3/1000 strokes : 137.5 +	- Rated speed rpm : 1328
Tolerance cm3/1000 strokes : + 1.0	- Tolerance 1/min : +- 5 - rack travel mm : 4.00

rack travel mm Tolerance mm Rated speed rpm rack travel mm	: +- 0.55 : 1297	Rated speed rpm : 700 rack travel mm : 11.10 Tolerance mm : + 0.10
Rated speed rpm Tolerance 1/min rack travel mm	: <del>←</del> 5	ANEROID/ALTITUDE COMPENSATOR TEST
rack travel mm Tolerance mm	: 0.85 - : + 0.55 -	SETTING
Rated speed rpm rack travel mm		Rated speed rpm : 500 Pressure hPa : 1500 rack travel mm : 11.10 Tolerance mm : + 0.10
Rated speed rpm Tolerance 1/min rack travel mm	: <del> 5</del>	MEASUREMENT
rack travel mm Tolerance mm		Pressure hPa : - Rated speed rpm : 500 rack travel mm : 7.70 Tolerance mm : + 0.10
LOW IDLE	-	Rated speed rpm : 500
control lever position degree tolerance degree	: 80.0 : +- 4.0	Pressure hPa : 630 - rack travel mm : 10.75 - Tolerance mm : +- 0.05
Setting point w/o	ut bumper spring	START CUT-OUT
Setting point w/o Rated speed rpm rack travel mm	: 650	- Rated speed rpm :> 100
Rated speed rpm	: 650	
Rated speed rpm rack travel mm	: 650 : 4.10 : 650 : 4.60	Rated speed rpm : > 100  Check
Rated speed rpm rack travel mm Testing: Rated speed rpm rack travel mm	: 650 : 4.10 : 650 : 4.60 : +- 0.10 : 2.00	Rated speed rpm : > 100  Check speed 1/min : > 80  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 150.5
Rated speed rpm rack travel mm  Testing: Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm	: 650 : 4.10 : 650 : 4.60 : +- 0.10 : 2.00	Rated speed rpm : > 100  Check speed 1/min : > 80  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 150.5 Tolerance cm3/1000 strokes : +- 3.0
Rated speed rpm rack travel mm  Testing: Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL  Rated speed rpm rack travel mm	: 650 : 4.10 : 650 : 4.60 : +- 0.10 : 2.00 : 750 : +- 50	Rated speed rpm : > 100  Check speed 1/min : > 80  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 150.5 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0
Rated speed rpm rack travel mm  Testing: Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 650 : 4.10 : 650 : 4.60 : + 0.10 : 2.00 : 750 : + 50 : 10.70 : + 0.05 : 900 : 11.10	Rated speed rpm : > 100  Check speed 1/min : > 80  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 150.5 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity
Rated speed rpm rack travel mm  Testing: Rated speed rpm rack travel mm Tolerance mm  rack travel mm Rated speed rpm Tolerance 1/min  TORQUE CONTROL  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm	: 650 : 4.10 : 650 : 4.60 : + 0.10 : 2.00 : 750 : + 50 : + 50 : 10.70 : + 0.05 : 900 : 11.10 : + 0.10 : 11.00 : 10.95	Rated speed rpm : > 100  Check speed 1/min : > 80  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 150.5 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0  Aneroid pressure hPa : Rated speed rpm : 500

# STARTING FUEL DELIVERY

Del. quantity cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance cm3/1000s. : + 19.0

# LOW IDLE

Del. quantity

cm3/1000 strokes : 21.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 604

Injection pump

Pump designation : PE6P120A720RS7188

: -10

EP type number : 0 412 626 924

Governor

Governer design. : RQV350...1050PA795

: -13

Governer no. : 0 421 814 017

Cust. part No. : 1337549

Customer—spec. information Customer : SCANIA

Motor : DS11 Allvarv

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

Clength num : 000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.30

Check

tolerance 'NW : +- 0.50

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 236.0

Tolerance	: + 1.0	†	
		T CONTROL LEVER	
Check tolerance cm3/1000s.	: +- 4.0	t control lever position degree	: 45.0
Spreed Tolerance cm3/1000 strokes	: 8.0	tolerance degree	
Check tolerance cm3/1000s.	12.0	position degree tolerance degree	
		RATED SPEED	
Rated speed rpm		† rack travel mm	: 12.30
Rack travel in mm Tolerance mm Del. quantity	4.70 : +- 0.30	Rated speed rpm Tolerance 1/min	
cm3/1000 strokes Tolerance cm3/1000 strokes		rack travel mm Rated speed rpm Tolerance 1/min	
Check tolerance		+	
cm3/1000s. Spreed Tolerance	: +- 6.0	+ rack travel mm + Tolerance mm + Rated speed rpm	: 0.50 : +- 0.50 : 1350
cm3/1000 strokes Check tolerance	: 4.0	‡	
cm3/1000s.	: 8.0	LOW IDLE	
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	control lever position degree tolerance degree	
GUIDE SLEEVE POSI	TION	control lever	
Rated speed rpm	: 1280	position degree tolerance degree	
Rack travel in mm Tolerance mm	: 12.00 : +- 1.00	Testing:	
	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.70 : + 0.10
	- · · · · · · · · · · · · · · · · · · ·	+	
Rated speed rpm Aneroid pressure	: 700	Rated speed rpm	: 250
hPa Del. quantity	: -	+ CRT mm min.	: > 8.00
cm3/1000 strokes Tolerance		Rated speed rpm	: 300
cm3/1000 strokes Check tolerance		TORQUE CONTROL	<del>Value on the section of the section</del>
cm3/1000S. Spreed Tolerance	: +- 4.0	Rated speed rpm rack travel mm	: 700 : 13.35
cm3/1000 strokes Check tolerance	: 8.0	Tolerance mm	: + 0.05
cm3/1000s.	: 12.0	Rated speed rpm rack travel mm	: 1050 : 13.35

Tolerance mm  ANEROID/ALTITUDE COMPENSATOR TEST		- <del> </del>	Rack travel in mm Rated speed rpm Tolerance 1/min	: 1095
SETTING		‡	STARTING FUEL DEL	IVERY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm MEASUREMENT	: 1500	<del>*                                    </del>	Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 10.40 : +- 0.20	+++++++++++++++++++++++++++++++++++++++	Check tolerance cm3/1000s.	: +- 24.0
Rated speed rpm	: 500	‡	LOW IDLE	
Pressure hPa rack travel mm Tolerance mm	: 440 : 12.05 : + 0.05	† † †	Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.70 : ← 0.30
Pressure hPa rack travel mm Tolerance mm	: 270 : 11.00 : +- 0.15	† † † †	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	RACTERISTICS : - : 1050	+++++++++++++++++++++++++++++++++++++++	Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 4.0 : 8.0
Del. quantity cm3/1000 strokes Tolerance	: 215.0	‡		
cm3/1000 strokes Check tolerance	: +- 4.0	‡		fication about
cm3/1000s.	: +- 6.0	Ī	End of test speci	rication sheet
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 500 : 153.0 : + 1.0 : + 4.0	+++++++++++++++++++++++++++++++++++++++		
BREAKAWAY		- <u>†</u>		

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 08.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 608

Injection pump

Pump designation : PE6P12OA72ORS7188

: -10J

EP type number : 0 412 626 926

Governor

Governer design. : RQ200/950PA745-3

Governer no. : 0 421 801 579

Cust. part No. : 1344920

Customer-spec. information

Customer : SCANIA Motor : DSC 11 71

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5

Tolerance bar : + 0.1

Overflow quantity

min. l/h : 235 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

: +- 0.05

CHECK

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance "NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm :	700 +	Rated speed rpm guide sleeve	: 355
Rack travel in mm : Tolerance mm : +-	10.75 - 0.05	travel mm Tolerance mm	: 2.97 : +- 0.10
Del. quantity cm3/1000 strokes :	157.0	Rated speed rpm guide sleeve travel mm	: 520 : 4.50
Tolerance	157.0	Tolerance mm	: + 0.10
cm3/1000 strokes : +-	1.0	Rated speed rpm guide sleeve	: 1045
Check tolerance cm3/1000s. : +-	4.0	travel mm Tolerance mm	: 5.50 : + 0.10
Spreed Tolerance cm3/1000 strokes :	8.0	Rated speed rpm guide sleeve	: 1360
Check tolerance		travel mm Tolerance mm	: 11.50 : + 0.50
cm3/1000s. :	12.0	GUIDE SLEEVE POSIT	TION
Rated speed rpm : Rack travel in mm :	4.70	Rated speed rpm	: 600
Tolerance mm : +- Del. quantity	0.30	Rack travel in mm Tolerance mm	
cm3/1000 strokes : Tolerance cm3/1000 strokes : +-	<u> </u>	FILL LOAD DELTVED	Y AT FULL LOAD STOP
Check tolerance cm3/1000s. : +-	+	Rated speed rpm	: 700 .
Spreed Tolerance	‡	Aneroid pressure hPa	: -
cm3/1000 strokes : Check tolerance cm3/1000s. :	8.0	Del. quantity cm3/1000 strokes Tolerance	: 157.0
	5.0	cm3/1000 strokes Check tolerance	
(B) SETTING OF INJECTI WITH GOVERNOR	ON PUMP	cm3/1000s. Spreed Tolerance	: + 4.0
GUIDE SLEEVE TRAVEL		cm3/1000 strokes Check tolerance	
Rated speed rpm : guide sleeve	250	cm3/1000s.	: 12.0
travel mm :	1.41 0.20	CONTROL LEVER	
Rated speed rpm : guide sleeve	1006	control lever position degree	: 41.0
travel mm : +-	4.90 0.15	tolerance degree	
Rated speed rpm : guide sleeve	930	control lever position degree tolerance degree	
travel mm : +-	4.50 0.10	RATED SPEED	

9,70 rack travel mm Del. quantity cm3/1000 strokes : 158.0 Rated speed rpm 995 : +-Tolerance 1/min Tolerance cm3/1000 strokes : +- 4.0rack travel mm 4.00 Check tolerance Rated speed rpm cm3/1000s.: +- 6.0 1100 Tolerance 1/min : +rack travel mm 0.50 BREAKAWAY : + - 0.50Tolerance mm Rated speed rpm : 1250 Rack travel in mm: 9.70 Rated speed rpm : Tolerance 1/min : +-LOW IDLE control lever STARTING FUEL DELIVERY position degree : 62.0 tolerance degree : +-Rated speed rpm 100 rack travel mm 10.75 control lever Tolerance mm : +- 0.05 position degree 7.0 Del. quantity cm3/1000 strokes : 170.0 tolerance degree : +-Tolerance cm3/1000 strokes : + 20.0Testing: Check tolerance cm3/1000s. : +- 24.0 250 Rated speed rpm : rack travel mm 4.70 : + 0.10Tolerance mm 2.00 rack travel mm LOW IDLE Rated speed rpm 340 : +- 20 Tolerance 1/min Rated speed rpm 250 4.70 : 150 rack travel mm Rated speed rpm Tolerance mm 0.30 CRT mm min. : > 6.00 Del. quantity cm3/1000 strokes : 16.0 Tolerance 3.0 TORQUE CONTROL cm3/1000 strokes : +-Check tolerance cm3/1000s. 6.0 Rated speed rpm 700 : +-: rack travel mm 10.75 Spreed Tolerance Tolerance mm : +- 0.05 cm3/1000 strokes : 4.0 Rated speed rpm 950 Check tolerance cm3/1000s. 8.0 10.75 rack travel mm : Tolerance mm : +- 0.05 End of test specification sheet FUEL DELIVERY CHARACTERISTICS

hPa

Aneroid pressure

Rated speed rpm :

950

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 657

Injection pump

Pump designation : PE6P130A320RS7368 EP type number : 0 412 636 836

Governor

Governer design. : RQV250...1125PA1210K

Governer no. : 0 421 815 460

Cust. part No. : 866737-P04 v. 11/95

Customer-spec. information Customer : PENTA

Motor : TAMD 122 P Power KW : 426.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration

damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5 Tolerance bar : +- 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : *4.45 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 7.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

 $\begin{array}{ccc} & : & -300 \\ \text{Tolerance} & : & + & 0.30 \end{array}$ 

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1125

Rack travel in mm : 11.40 Tolerance mm : +- 0.05

Del. quantity		+ guide sleeve
cm3/1000 strokes	: 313.0	travel mm : 2.73
<b>T</b> .		_
Tolerance cm3/1000 strokes	: +- 1.5	+ Rated speed rpm : 430
CREATIONS STROKES	; — (.)	+ Rated speed rpm : 430 + guide sleeve
Check tolerance		travel mm : 3.61
cm3/1000s.	: +- 5.0	+ Tolerance mm : + 0.25
		1
Spreed		Rated speed rpm : 1420
Tolerance		+ guide sleeve
cm3/1000 strokes	: 9.0	+ travel mm : 13.50
06-1-4-1		_ + Tolerance mm : + 0.50
Check tolerance cm3/1000s.	: 13.0	T
CMD/ (UUUS.	: 13.0	GUIDE SLEEVE POSITION
Rated speed rpm	: 260	T doing seeze rosition
nacca opeca i piii	. 200	Rated speed rpm : 1284
Rack travel in mm	1: 4.70	1
Tolerance mm	: <del>+-</del> 0.20	+ Rack travel in mm: 10.50
Del. quantity		+ Tolerance mm : +- 2.00
cm3/1000 strokes	: 20.0	+
Tolerance	. 70	
cm3/1000 strokes	: +- 3.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s.	: +- 6.0	Rated speed rpm : 1125
Spreed	0.0	+ Rated speed rpm : 1125 + Aneroid pressure
Tolerance		hPa : 2000
cm3/1000 strokes	: 7.0	Del. quantity
Check tolerance		+ cm3/1000 strokes : 313.0
cm3/1000s.	: 11.0	+ Tolerance
		+ cm3/1000 strokes : + 1.5
<b>4-5 </b>		+ Check tolerance
(B) SETTING OF IN	JECTION PUMP	+  cm 3/1000s. : + 5.0
WITH GOVERNOR		+ Spreed + Tolerance
		+ cm3/1000 strokes : 9.0
GUIDE SLEEVE TRAV	FI	Check tolerance
GOIDE OFFERE HIME		+ cm3/1000s. : 13.0
Rated speed rpm	: 260	+
guide sleeve		+
travel mm	: 1.69	
Tolerance mm	: + 0.25	+ CONTROL LEVER
Data danced man	. 1174	† control loven
Rated speed rpm guide sleeve	: 1176	<pre>+ control lever + position degree : 64.0</pre>
travel mm	: 10.15	tolerance degree : + 4.0
Tolerance mm	: +- 0.25	totel alice degree 4.0
1000101100 11111		→ control lever
Rated speed rpm	: 782	position degree : 118.0
guide sleeve		+ tolerance degree : +- 4.0
travel mm	: 6.36	†
Tolerance mm	: + 0.25	+ RATED SPEED
Datad anced nec	: 275	rack travel mm : 10.40
Rated speed rpm guide sleeve	: 275	Rated speed rpm : 1165
travel mm	: 2.04	Tolerance 1/min : +- 5
Tolerance mm	: +- 0.25	-
		rack travel mm : 4.00
Rated speed rpm	: 325	Rated speed rpm : 1246

Tolerance 1/min	: +- 15	+ P	Pressure hPa	: -
		<u> </u>	Rated speed rpm	: 500
rack travel mm	: 0.50	+ r	rack travel mm	7.15
Tolerance mm	: +- 0.50	<b>∔</b> ⊤	Tolerance mm	: <del></del> 0.20
Rated speed rpm	: 1300	+		
		[→] R	Rated speed rpm	: 1125
·		р	Pressure hPa	: 1190
LOW IDLE				
2011 2022		1 7	rack travel mm Tolerance mm	: +- 0.20
		ļ ·	9 CO / G / 100 / 1, 111	
control lever		i P	Pressure hPa	: 160
position degree	: 71.0		ack travel mm	
tolerance degree			olerance mm	
		+		
control lever		1		
position degree	: 18.0	4		
tolerance degree	: +- 4.0	<del> </del> -		<del></del>
<del>-</del>		FI	UEL DELIVERY CHA	RACTERISTICS
Testing:		+		
-		+ A	neroid pressure	
Rated speed rpm			ıPa	: 2000
rack travel mm Tolerance mm	: 4.70		Rated speed rpm	: 700
Tolerance mm	: +- 0.10	† D	el. quantity	
		<del>†</del> ci	m3/1000 strokes	: 311.0
Rated speed rpm	: 200		olerance	
			m3/1000 strokes	: <del>←</del> 3.0
CRT mm min.	: > 5.90		heck tolerance	
		t ci	m3/1000s.	: <del>←</del> 6.0
Rated speed rpm	: 330		preed	
			olerance	
<del></del>	<del></del>		m3/1000 strokes	: 10.0
TORQUE CONTROL			heck tolerance	4
<b>.</b>	4405	† ci	m3/1000s.	: 14.0
Rated speed rpm		† .	• •	
rack travel mm	: 11.40		neroid pressure	200
Tolerance mm	: +- 0.05		Pa	: 2000
<b>5</b> 1 1 1	700		ated speed rpm	: 500
Rated speed rpm	: 700		el. quantity	- 200 0
rack travel mm	: 10.55	· ·	m3/1000 strokes	: 290.0
Tolerance mm	: ← 0.15		olerance m3/1000 strokes	70
Datad anoad nam	: 500		heck tolerance	: 3.0
Rated speed rpm			m3/1000s.	: +- 6.0
rack travel mm Tolerance mm	: +- 0.15	T	mar rodda.	6.0
roterance mm	: +- 0.15	Ι Δ.	neroid pressure	
			Pa	
ANEROID/ALTITUDE		1	ated speed rpm	: 500
COMPENSATOR TEST			el. quantity	. 500
CONTENTOR FED I			m3/1000 strokes	: 187.0
			olerance	. 101.0
SETTING			m3/1000 strokes	: +- 1.5
			heck tolerance	1.4 4
Rated speed rpm	: 1125		m3/1000s.	: +- 5.0
Pressure hPa		1		- 5.0
rack travel mm		1 _		
Tolerance mm		↓ RF	REAKAWAY	
TO SOT MITTOUNIE		1 5	- See al St 1781 3 F	
MEASUREMENT		1		
repriese test t		↓ Ra	ack travel in mm	: 10.40
		, ,,,,		· = · · · =

Rated speed rpm : 1165
Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.15
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 80.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 20.0

## LOW IDLE

Rated speed rpm : 260 rack travel mm : 4.70 : +- 0.20 Tolerance mm Del. quantity 20.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. 11.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.09.95 : ISO 4113

Combination No. : 0 402 698 806

Injection pump

Pump designation : PE8P120A720LS7331

: -10

: 0 412 628 896 EP type number

Governor

Governer design. : RE30

Governer no. : 0 421 890 022

Cust. part No. : 1362097

Customer-spec. information

Customer

: SCANIA

Motor

: DSC1409, DSC1416

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar :

2.5

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

251.5

Tolerance bar

; +- 1.5

Test Lines

: 1 680 750 008

Outside diameter :

6.0

x inside diameter:

2.0

x length mm :

600

REMARKS

Pump-specific values in Section (B)

must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 5.05

Prestroke mm 5.05

: +- 0.05 Tolerance mm Tolerance mm : +- 0.05

Check

tolerance mm : **←** 0.10

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

: +- 1.50 Tolerance mm

: 1-2-7-3-4 Firing order

: - 5- 6- 8

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : +- 0.30

Check

: +- 0.50 tolerance °NW

Start of delivery mark

Barrel no. : 1

Vibration

damper

(RoBo diaphragm) : 3.2

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: 0 Setting point (P, R and H pump) 3,100 Uact V 13.00 CRT mm : +/- 0.05 Tolerance mm Check : +/- 0.10 tolerance mm Check value (P, R and H pump) 1.700 Uact V 6.15 CRT mm Tolerance mm : +/- 0.25 Check tolerance mm : +/- 0.30Setting point (M pump) 3.100 Uact V 12.50 CRT mm Tolerance mm : +/- 0.05 Check : +/- 0.10tolerance mm Check value (m pump) Uact V 1.700 CRT mm 5.50 Tolerance man : +/- 0.25 Check : +/- 0.30tolerance mm Stop position : Value with Uact V deenergised adjusting magnet

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 Amplitude V 1.4 Tolerance V : +/- 0.6 Check : +/- 1.20 tolerance V Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 700 Rated speed rpm Uact V 3.000 : Del. quantity cm3/1000 strokes : 248.0 Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 FUEL DELIVERY CHARACTERISTICS 950 Rated speed rpm : Uact V 3.000 Del. quantity cm3/1000 strokes : 224.0 Tolerance cm3/1000 strokes : +-4.0 Check tolerance cm3/1000s. 6.0 End of test specification sheet

tolerance mm

: +/- 0.35

and control rod in stop position. 0.75

: +/- 0.25

CRT mm

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.12.95 Test oil : ISO 4113

Combination No. : 0 402 736 890

Injection pump

Pump designation : PES6P120A120RS7314

EP type number : 0 412 726 901

Governor

Governer design. : RQV400...1250PA964

: -32K

: 0 421 815 486 Governer no.

Cust. part No. : 3282607

Customer-spec. information : CUMMINS Customer : 6BTAA Motor : 158.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : ÷- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : Tolerance bar : +- 0.1

Overflow quantity

min. L/h 140 Tolerance 1/h : +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar 208.5 : +- 1.5 Tolerance bar

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm 3.70 : + - 0.05Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 12.50 : +- 0.50 Tolerance mm

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 6.50 ; +- 0.50 Tolerance

Check

tolerance °NW : + - 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1250

		i midde elemen
Rack travel in ma Tolerance mm		<pre>+ guide sleeve + travel mm : 3.33 + Tolerance mm : +- 0.25</pre>
Del. quantity cm3/1000 strokes	: 149.0	Rated speed rpm : 1700 guide sleeve travel mm : 11.50
Tolerance cm3/1000 strokes	: + 1.0	Tolerance mm : + 0.50
Check tolerance cm3/1000s.	: + 4.0	GUIDE SLEEVE POSITION Rated speed rpm : 1430
Spreed Tolerance cm3/1000 strokes	: 5.0	Rack travel in mm : 13.60 Tolerance mm : +- 1.30
Check tolerance cm3/1000s.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm	: 400	+ Rated speed rpm : 1250 - Aneroid pressure
Rack travel in mm Tolerance mm Del. quantity	: +- 0.30	hPa : 1500 Del. quantity cm3/1000 strokes : 149.0
cm3/1000 strokes Tolerance cm3/1000 strokes		Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. Spreed	; <del></del> -5.0	cm3/1000s. : + 4.0 + Spreed + Tolerance
Tolerance cm3/1000 strokes Check tolerance		+ cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000s. : 9.0
cm3/1000s.		+
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	control lever
GUIDE SLEEVE TRAV	/EL	position degree : 59.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm	: 400 : 1.39 : + 0.20	control lever position degree : 116.0 tolerance degree : + 4.0
Rated speed rpm	: 1314	RATED SPEED
guide sleeve travel mm Tolerance mm	: 7.65 : + 0.15	rack travel mm : 13.20 Rated speed rpm : 1295 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm	: 864 : 4.76	rack travel mm : 4.00 Rated speed rpm : 1490 Tolerance 1/min : +- 15
Tolerance mm	: +- 0.25	rack travel mm : 0.50
Rated speed rpm	: 550	Tolerance mm : + 0.50 Rated speed rpm : 1550

		+	Rated speed rpm	: 1250
FOM IDTE	<del>- Marian</del>	‡ †	Pressure hPa rack travel mm Tolerance mm	: 11.80
control lever position degree tolerance degree	: 72.0 : + 4.0	† †	Pressure hPa rack travel mm Tolerance mm	: 13.50
control lever position degree tolerance degree	: 15.0 : +- 4.0	‡	START CUT-OUT	270
Testing:		‡	Rated speed rpm Rated speed rpm	: > 270 : < 340
Rated speed rpm rack travel mm Tolerance mm	: 6.50		Check speed 1/min Check speed 1/min	
Rated speed rpm	: 300	Ŧ	speed (7)((1))	. \ 300
CRT mm min.	: > 8.50	Ŧ	FUEL DELIVERY CHA	ARACTERISTICS
Rated speed rpm	: 430		Aneroid pressure hPa Rated speed rpm	: 1500 · 750
TORQUE CONTROL		Ŧ	Del. quantity cm3/1000 strokes	
Rated speed rpm rack travel mm	: 14.20	+	Tolerance cm3/1000 strokes	
Tolerance mm  Rated speed rpm rack travel mm	: 750	+	Check tolerance cm3/1000s. Spreed	: +- 6.0
rack travel mm Tolerance mm	: + 0.10	Ŧ	Tolerance cm3/1000 strokes Check tolerance	
Rated speed rpm rack travel mm	: 12.15	+++++++++++++++++++++++++++++++++++++++	cm3/1000s.	
Tolerance mm	: <b>←</b> 0.15	‡	Aneroid pressure hPa	: -
ANEROID/ALTITUDE			Rated speed rpm Del. quantity	
COMPENSATOR TEST		‡	cm3/1000 strokes Tolerance	
SETTING		‡	cm3/1000 strokes Check tolerance	
Rated speed rpm		‡	cm3/1000s.	: +- 4.0
Pressure hPa rack travel mm Tolerance mm	: 1500 : 14.20 : + 0.05	+++++++++++++++++++++++++++++++++++++++	BREAKAWAY	
MEASUREMENT		‡	Rack travel in mm	
Pressure hPa Rated speed rpm rack travel mm	: 11.00	† † †	Rated speed rpm Tolerance 1/min	
Tolerance mm	: +- 0.10	‡	STARTING FUEL DEL	IVERY

Rated speed rpm Dela quantity	:	100
cm3/1000 strokes	:	210.0
Tolerance cm3/1000 strokes	: +-	15.0
Check tolerance cm3/1000s.	: +-	19.0

# LOW IDLE

Rated speed rpm	: 400
rack travel mm	: 6.50
Tolerance mm	: ← 0.30
Del. quantity	
cm3/1000 strokes	: 20.0
Tolerance	
cm3/1000 strokes	: ← 3.0
Check tolerance	
cm3/1000s.	: <del>←</del> 5.0
Spreed	
Tolerance	<b>~</b> ^
cm3/1000 strokes	: 7.0
Check tolerance	44.0
cm3/1000s.	: 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.12.95 Test oil : ISO 4113

Combination No. : 0 402 746 647

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQV275...1100PA1208K

Governer no. : 0 421 815 459

Cust. part No.

Customer-spec. information

Customer : IVECO-FRÂNCE Motor : 8460.41.4000

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 140 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance *NW : +- 0.50

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75
Tolerance mm: + 0.05

Del. quantity cm3/1000 strokes : 273.0

____

Tolerance

cm3/1000 strokes : +- 1.0

4.0

Check tolerance cm3/1000s. : +-

+	0.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Spreed +	Rack travel in mm : 10.00 Tolerance mm : + 2.70
cm3/1000 strokes : 5.0	Total ance than . T = 2.70
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	0. 4. 4 1
Rated speed rpm : 275	Rated speed rpm : 1100 Aneroid pressure
Nated speed (pill : 213	hPa : 1200
Rack travel in mm: 6.80	Del. quantity
Tolerance mm : + 0.20	cm3/1000 strokes : 273.0
Del. quantity	Tolerance
cm3/1000 strokes : 23.0	cm3/1000 strokes : + 1.0 Check tolerance
cm3/1000 strokes : +- 3.0	cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 6.0	Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance + cm3/1000 strokes : 8.0 +	Check tolerance cm3/1000s. : 9.0
Check tolerance	CH2/ (UUUS. : 9.0
cm3/1000s. : 12.0	
<del>}</del>	
(D) OF THE OF THE POTTON DUMP	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever
WITH GOVERNOR	position degree : 117.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL +	
Patest annual num . 275	RATED SPEED
Rated speed rpm : 275 + guide sleeve +	rack travel mm : 11,70
travel mm : 1.70	Rated speed rpm : 1145
Tolerance mm : +- 0.20	Tolerance 1/min : +- 5
+	
Rated speed rpm : 1155	rack travel mm : 4.00
guide sleeve + travel mm : 9.75 +	Rated speed rpm : 1260 Tolerance 1/min : +- 15
Tolerance mm : + 0.15	roterance mann
+	rack travel mm : 0.50
Rated speed rpm : 790 +	Tolerance mm : + 0.50
guide sleeve + travel mm : 6.42 +	Rated speed rpm : 1350
travel mm : 6.42 + 7.01	
1	
Rated speed rpm : 460	LOW IDLE
guide sleeve	
travel mm : 3.77 + Tolerance mm : + 0.25 +	control lever
Toterarice into	position degree : 76.0
Rated speed rpm : 1440	tolerance degree : +- 4.0
guide sleeve	•
travel mm : 13.50 +	Testing:
Tolerance mm : $\leftarrow$ 0.50	Rated speed rpm : 275
	Rated speed rpm : 275 rack travel mm : 6.80
GUIDE SLEEVE POSITION	Tolerance mm : +- 0.10
+	
Rated speed rpm : 1310 +	Rated speed rpm : 100

E20

	+	Check
CRT mm min.	: > 8.30 +	speed 1/min : > 150
	+	Check
Rated speed rpm	: 335	speed 1/min : < 240
TORQUE CONTROL	1	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 1100	Aneroid pressure
rack travel mm	: 12.75	hPa : 1200
Tolerance mm	: + 0.05	Rated speed rpm : 800
Datasi annad man	. 900	Del. quantity
Rated speed rpm rack travel mm		cm3/1000 strokes : 290.0 Tolerance
Tolerance mm	: + 0.10	cm3/1000 strokes : +- 3.0
TOCCI GITCC TAIR		Check tolerance
Rated speed rpm	: 650	cm3/1000s. : +- 6.0
rack travel mm	: 13.10 +	
Tolerance mm	: <b>←</b> 0.10 +	Aneroid pressure
	+	hPa : 1200
Rated speed rpm	: 500	Rated speed rpm : 500
rack travel mm Tolerance mm	: 13.10 + : + 0.10 +	Del. quantity cm3/1000 strokes : 264.0
loceratice light	· - 0.10	Tolerance
		cm3/1000 strokes : +- 3.0
ANEROID/ALTITUDE	1	Check tolerance
COMPENSATOR TEST	+	cm3/1000s. : +- 6.0
	+	
	+	Aneroid pressure
SETTING	†	hPa : -
Dated aroad nam	: 800	Rated speed rpm : 500 Del. quantity
Rated speed rpm Pressure hPa		cm3/1000 strokes : 144.0
rack travel mm		Tolerance
Tolerance mm	· ·	cm3/1000 strokes : + 1.0
	+	Check tolerance
MEASUREMENT	+	cm3/1000s. : +- 4.0
December 50s	<u> </u>	
Pressure hPa Rated speed rpm	800	BREAKAWAY
rack travel mm	9.70	DICENTARY
Tolerance mm	: + 0.10	
	1	Rack travel in mm : 11.70
Rated speed rpm	: 800	Rated speed rpm : 1145
	+	Tolerance 1/min : +- 5
Pressure hPa		
rack travel mm Tolerance mm	: 10.70 : +- 0.20	
roterance nun	I	STARTING FUEL DELIVERY
Pressure hPa	: 520	OTHER TOPE DESTANT
rack travel mm	12.50	Rated speed rpm : 100
Tolerance mm	: ← 0.05 +	rack travel mm : 12.20
	+	Tolerance mm : +- 0.30
		Del. quantity
START CUT-OUT	†	cm3/1000 strokes : 120.0
Dated anced nom	: > 170	Tolerance cm3/1000 strokes : +- 15.0
Rated speed rpm Rated speed rpm	t .	Check tolerance
Hara opeca i piii	1	cm3/1000s. : +- 19.0
	\$	

# LOW IDLE

Rated speed rpm	: 275
rack travel mm	: 6.80
Tolerance mm	: +- 0.20
Del. quantity	
cm3/1000 strokes	: 23.0
Tolerance	
cm3/1000 strokes	: + <del>-</del> 3.0
Check tolerance	
cm3/1000s.	: <del>←</del> 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 12,12,95 Test oil : ISO 4113

Combination No. : 0 403 444 155

Injection pump

Pump designation : PES4MW100/720RS1235

EP type number : 0 413 404 121

Governor

Governer design. : RQV300...1300MW139

: 0 420 083 304 Governer no.

: 0260748502 Cust. part No.

Customer-spec. information : MB-NFZ Customer : 0M364A Motor

: 79.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

: 1 419 992 198 Overflow valve

1.5 Inlet press. bar :

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : **←** 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0 x inside diameter: 3.0 x length mm •

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 3.70 : + 0.05 Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm : 20.00 Tolerance mm : +- 1.00

: 1-3-4-2 Firing order

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance *NW : + - 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 13.15 : + 0.05Tolerance mm

Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance +	
cm3/1000s. : 6.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 1300
Rack travel in mm: 7.80 + Tolerance mm: + 0.10	Aneroid pressure hPa : 700
Del. quantity cm3/1000 strokes : 12.0	Del. quantity cm3/1000 strokes : 90.0
Tolerance cm3/1000 strokes : + 2.0	Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : + 4.5	Check tolerance cm3/1000s. : +- 3.0
Spreed + Tolerance +	Spreed Tolerance
cm3/1000 strokes : 3.5 Check tolerance	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000s. : 5.5	cm3/1000s. : 6.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	<pre>control lever position degree : 114.0 tolerance degree : +- 4.0</pre>
Rated speed rpm : 300 + guide sleeve +	RATED SPEED
travel mm : 1.24 + Tölerance mm : + 0.20 +	rack travel mm : 12.15
Rated speed rpm : 1355	Rated speed rpm : 1345 Tolerance 1/min : +- 5
guide sleeve + travel mm : 10.32 +	rack travel mm : 4.00
Tolerance mm : + 0.15	Rated speed rpm : 1450 Tolerance 1/min : +- 15
Rated speed rpm : 894 + guide sleeve +	rack travel mm : 0.50
travel mm : 6.18 † Tolerance mm : + 0.25 †	Tolerance mm : +- 0.50 Rated speed rpm : 1550
Rated speed rpm : 510	
guide sleeve † travel mm : 3.56 †	LOW IDLE
Tolerance mm : + 0.25	
Rated speed rpm : 1600 + guide sleeve +	control lever position degree : 76.0
travel mm : 13.50 + Tolerance mm : + 0.50	tolerance degree : +- 4.0
	Testing:
GUIDE SLEEVE POSITION	Rated speed rpm : 300 rack travel mm : 7.80
Rated speed rpm : 1430	rack travel mm : 7.80 Tolerance mm : + 0.10
Rack travel in mm: 10.00 Tolerance mm: + 2.70	Rated speed rpm : 200
The state of the s	CRT mm min. :> 9.50
•	

		+ Rated speed rpm : 600 + Del. quantity
TORQUE CONTROL		+ cm3/1000 strokes : 78.0
Rated speed rpm rack travel mm	: 1300 : 13.15	Tolerance cm3/1000 strokes : +- 1.5 Check tolerance
rack travel mm Tolerance mm		cm3/1000s. : +- 4.0 Spreed
Rated speed rpm rack travel mm Tolerance mm	: 13.40	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Pated speed rom	• 1600	- cm3/1000s. : 7.0
rack travel mm Tolerance mm	: 13.30 : + 0.10	+ Aneroid pressure + hPa : -
ANDOTO (A) TITLING		Rated speed rpm : 500  Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes : 49.0 Tolerance cm3/1000 strokes : +- 1.0
SETTING		Check tolerance + cm3/1000s. : +- 3.0
Rated speed rpm	: 500	1
Pressure hPa rack travel mm	: 700	BREAKAWAY
Tolerance mm MEASUREMENT	: 0.10	Rack travel in mm : 12.15 Rated speed rpm : 1345
Pressure hPa	: -	† Tolerance 1/min : + 5
Rated speed rpm Tolerance mm		+
Rated speed rpm	: 500	+ STARTING FUEL DELIVERY
Pressure hPa rack travel mm	: 230 : 1.00	+ Rated speed rpm : 100 + Del. quantity + cm3/1000 strokes : 90.0
Tolerance mm	: + 0.10	Tolerance cm3/1000 strokes : +- 5.0
Pressure hPa rack travel mm	: 150 : 0.40	Check tolerance cm3/1000s. :+- 8.0
Tolerance mm	: +- 0.10	<del>†</del>
START CUT-OUT		LOW IDLE
Rated speed rpm	: > 100	+
Rated speed rpm Check	: < 200	+ Rated speed rpm : 300 + rack travel mm : 7.80 + Tolerance mm : + 0.10
speed 1/min Check	: > 80	Del. quantity cm3/1000 strokes : 12.0
speed 1/min	: < 230	Tolerance cm3/1000 strokes : + 2.0
FUEL DELIVERY CHA	RACTERISTICS	+ Check tolerance + cm3/1000S. : + 4.5 + Spreed
Aneroid pressure hPa	: 700	Tolerance : 3.5

Check	tol	era	nce
cm3/10	2000	<b>3.</b>	

5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 13,12,95 : ISO 4113

Combination No.

: 0 403 466 173

Injection pump

Pump designation : PES6MW100/120RS1241

EP type number

: 0 413 406 240

Governor

Governer design. : RSV400...950MW0A384

: -1

Governer no.

: 0 420 085 285

Cust. part No.

: 3930118

Customer-spec. information : CDC

Customer

: 6 CT

Motor Power KW

: 145.0

TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 1 417 413 047

Inlet press. bar :

1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

208.5

Tolerance bar

1.5

Test lines

: 1 680 750 014

Outside diameter :

6.0

x inside diameter: 2.0 x length mm 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +-

2.80 Prestroke mm : + 0.05

Tolerance mm Check

: + 0.10tolerance mm

Rack travel in mm: 10.50

Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : + 0.50

Check

tolerance °NW : + - 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50

Barrel no.

BASIC SETTING

950 Rated speed rpm

Rack travel in mm : 12.50

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 147.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : + 4.0	Check tolerance cm3/1000s. : 7.5
Spreed Tolerance cm3/1000 strokes : 4.0	CONTROL LEVER
Check tolerance cm3/1000s. : 7.5	position degree : 80.0 tolerance degree : +- 4.0
Rated speed rpm : 400	RATED SPEED
Rack travel in mm: 5.80 Tolerance mm: + 0.30 Del. quantity cm3/1000 strokes: 22.0	rack travel mm : 11.50 Rated speed rpm : 995 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : + 2.0 check tolerance cm3/1000s. : + 4.5	rack travel mm : 4.00 Rated speed rpm : 1080 Tolerance 1/min : +- 15
Spreed Tolerance cm3/1000 strokes : 3.5	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1250
Check tolerance cm3/1000S. : 5.5	rack travel mm : 4.00 Rated speed rpm : 1095
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
	2 3.32
GUIDE SLEEVE POSITION	control lever
GUIDE SLEEVE POSITION  Rated speed rpm : 800	
+	control lever position degree : 68.0 tolerance degree : + 4.0 Setting point w/out bumper spring
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : +- 0.35  governor spring	control lever position degree : 68.0 tolerance degree : 4.0
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : +- 0.35  governor spring pre-tension	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950 Aneroid pressure	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30  Testing:  Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.30  rack travel mm : 2.00
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : +- 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950 Aneroid pressure hPa : 1200 Del. quantity	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30  Testing:  Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.30
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 147.0 Tolerance	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30  Testing:  Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.30  rack travel mm : 2.00 Rated speed rpm : 505
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 147.0	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30  Testing:  Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.30  rack travel mm : 2.00 Rated speed rpm : 505 Tolerance 1/min : + 35
Rated speed rpm : 800  Rack travel in mm : 0.65 Tolerance mm : + 0.35  governor spring pre-tension click setting x : 4.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 147.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 68.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 400 rack travel mm : 5.30  Testing:  Rated speed rpm : 400 rack travel mm : 5.80 Tolerance mm : + 0.30  rack travel mm : 2.00 Rated speed rpm : 505 Tolerance 1/min : + 35  Rated speed rpm : 100

rack travel mm Tolerance mm	: 12.50 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 12.50 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.25 : + 0.10
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 850 : 11.70 : + 0.20
Pressure hPa reck travel mm Tolerance mm	: 680 : 10.75 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 995
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100

F01

rack travel mm : 20.00 : +- 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 170.0 Tolerance cm3/1000 strokes : + 10.0Check tolerance cm3/1000s. : +- 13.0

LOW IDLE

Rated speed rpm : 400 rack travel mm 5.80 Tolerance mm : + - 0.30Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : --2.0 Check tolerance cm3/1000s. 4.5 : +-Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.12.95 Test oil : ISO 4113

Combination No. : 0 400 846 185

Injection pump

Pump designation : PES6A80D410RS2085Y EP type number : 0 410 886 044

Governor

Governer design. : RQV300...1475AB533DL

Governer no. : 0 420 214 069

Cust part No. :

Customer-spec. information Customer : MB-NFZ

: OM 352 Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

F02

x length mm : 600 REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm Tolerance mm : + 0.05Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1450

Rack travel in mm: 8.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 46.5

Tolerance cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s. : +-2.0

Spreed Tolerance

cm3/1000 strokes : 2.5

Check tolerance

4.0 cm3/1000s.

300 Rated speed rpm :

Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 0.10 : 14.5 : ← 1.5 : ← 3.5	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 46.5 : + 0.5 : + 2.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER  control lever  position degree	. 11/ 0
GUIDE SLEEVE TRAV	EL	tolerance degree	
Rated speed rpm guide sleeve	: 300	RATED SPEED	
travel mm Tolerance mm	: 1.04 : + 0.20	rack travel mm Rated speed rpm Tolerance 1/min	: 1510
Rated speed rpm guide sleeve travel mm	: 1516 : 8.76 : + 0.15	rack travel mm Rated speed rpm	
Tolerance mm  Rated speed rpm guide sleeve travel mm	+	Tolerance 1/min rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50
Tolerance mm	: + 0.25	, ,	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 590 + : 3.20 + : + 0.25	LOW IDLE	
Rated speed rpm guide sleeve travel mm Tolerance mm	+	control lever position degree tolerance degree	: 69.0 : +- 4.0
GUIDE SLEEVE POSI	TION	Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.00 : +- 0.10
Rated speed rpm	: 1420	Rated speed rpm	
Rack travel in mm Tolerance mm	: 16.50 : + 1.30	CRT mm min.	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm	: 440
Rated speed rpm	: 1450	TORQUE CONTROL	

Rated speed rpm rack travel mm Tolerance mm	: 1450 : 8.25 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 9.25 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 9.00 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 8.35 : +- 0.15
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 220
Check speed 1/min Check speed 1/min	: > 80 : < 240
Rack travel in mm Rated speed rpm Tolerance 1/min	
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 13.10 : + 0.20 : 76.5 : + 7.5 : + 10.0
LOW IDLE	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.00 : ← 0.10

Del. quantity		
cm3/1000 strokes	:	14.5
Tolerance		
cm3/1000 strokes	: +-	1.5
Check tolerance		
cm3/1000s.	: +-	3.5
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	•	6.0
	•	310

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 14.12.95 Test oil : TSO 4113

Combination No. : 0 401 876 777

### Injection pump

Pump designation : PE6P12OA32ORS3261 EP type number : O 411 826 796

### Governor

Governer design. : RSV250...1100P0A374

: -11

Governer no. : 0 421 833 346

Cust. part No. : 864451 PO4 v. 6/95

Customer-spec. information
Customer : PENTA
Motor : TAMD 16

Motor : TAMD 102 A

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration

damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Test nozzie holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 3.0 x Length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance *NW : +- 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance *NW : +- 0.75

## BASIC SETTING

Rated speed rpm : 700

nm · 12 15

Rack travel in mm : 12.15
Tolerance mm : + 0.05

+	Check tolerance
Del. quantity cm3/1000 strokes : 260.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000s. : 9.0
Canada	CONTROL LEVED
Spreed Tolerance cm3/1000 strokes : 5.0	control lever  position degree : 44.0
Check tolerance cm3/1000s. 9.0	tolerance degree : +- 4.0
Rated speed rpm : 250	control lever position degree : 94.0
Rack travel in mm: 6.50	tolerance degree : +- 4.0
Tolerance mm : +- 0.20  Del. quantity	RATED SPEED
cm3/1000 strokes : 23.0	rack travel mm : 11.10
Tolerance	Rated speed rpm : 1145
cm3/1000 strokes : + 3.0	Tolerance 1/min : + 5
Check tolerance + 6.0 +	rack travel mm : 4.00
Spreed	Rated speed rpm : 1210
Tolerance	Tolerance 1/min : + 15
cm3/1000 strokes : 5.0	, occi and in min.
Check tolerance	rack travel mm : 0.85
cm3/1000s. : 7.0	Tolerance mm : + 0.55
+	Rated speed rpm : 1350
+	
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR	Rated speed rpm : 1220
‡	
GUIDE SLEEVE POSITION	LOW IDLE
Rated speed rpm : 800	
Nated speed (pii)	control lever
Rack travel in mm: 0.50	position degree : 69.0
Tolerance mm : +- 0.20	tolerance degree : + 4.0
. +	
governor spring +	control lever
pre-tension + click setting x : 2.25 +	position degree : 19.0 tolerance degree : +- 4.0
click setting $x$ : 2.25	tolerance degree : +- 4.0
	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	Dated aread are - 250
Rated speed rpm : 700	Rated speed rpm : 250 rack travel mm : 6.00
Rated speed rpm : 700 + Aneroid pressure +	rack travel mm : 6.00
hPa : 1500	Testing:
Del. quantity	
cm3/1000 strokes : 260.0	Rated speed rpm : 250
Tolerance +	rack travel mm : 6.50
cm3/1000 strokes : +- 1.0 +	Tolerance mm : + 0.10
·	

F06

rack travel mm Rated speed rpm Tolerance 1/min	
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.15 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.15 : ← 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 8.10 : + 0.10
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 900 : 3.60 : +- 0.10
Pressure hPa rack travel mm Tolerance mm	: 140 : 0.25 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa	:
Rated speed rpm Del. quantity	: 700
cm3/1000 strokes Tolerance	: 140.0
cm3/1000 strokes Check tolerance	: <del>←</del> 1.0
cm3/1000s.	: +- 4.0

Rack travel in mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 17.00 Tolerance mm : + 1.00

## LOW IDLE

Rated speed rpm rack travel mm Tolerance mm	:	+	250 6.50 0.20
Del. quantity cm3/1000 strokes	:		23.0
Tolerance cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000S.	:	+-	6.0
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:		5.0
cm3/1000s.	:		7.0

End of test specification sheet

BREAKAWAY

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 14.12.95 Edition Test oil : 14.12.95 Combination No. : 0 401 876 810 Injection pump Pump designation : PE6P120A320RS3359 EP type number : 0 411 826 815 Governor Governer design. : RSV325...1200P1A615 Governer no. : 0 421 833 503 Cust. part No. : 3825515 PO2 v. 10/95 Customer-spec. information Customer : PENTA : TD 730ME Motor Power KW : 150.0 TEST BENCH REQUIREMENTS Inlet line : 3.1 Test oil inlet temp. °C Tolerance °C : +- 2.0 Overflow valve : 2 417 413 077 Inlet press. bar : 2.5 Tolerance bar : +- 0.1 Test nozzle holde assembly : 1 688 901 101

: 208.5

REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values ____ BEGINNING OF DELIVERY Test pressure bar : 26.0 Tolerance bar : + 1.0 Prestroke mm : 3.35 Tolerance mm : + 0.05 Check tolerance mm :  $\leftarrow$  0.10 Rack travel in mm: 9.00 Tolerance mm : + 0.50 Firing order : 1-5-3-6-2-: 4 Phasing : 0-60-120-180-240 : -300 : +- 0.30 Tolerance Check tolerance *NW : +- 0.50 Start of delivery mark Tolerance : +- 0.50 Check : +- 0.75 tolerance °NW Barrel no. : 1 BASIC SETTING Rated speed rpm : 1200 Rack travel in mm: 11.00 Tolerance mm :  $\leftarrow$  0.05 Del. quantity cm3/1000 strokes : 123.0

x inside diameter :

x Length mm :

2.0

600

Opening pressure

Tolerance bar : + 1.5

Outside diameter : 6.0

Test Lines : 1 680 750 008

t.	<b>-</b>
Tolonoo	Tolerance
Tolerance +	cm3/1000 strokes : 7.0
cm3/1000 strokes : +- 1.0	Check tolerance cm3/1000s. : 11.0
Check tolerance	cm3/1000s. : 11.0
cm3/1000s. : +- 4.0	
CIII) (0003: - 4.0	
Spreed	CONTROL LEVER
Tolerance	CONTROL ELVEN
cm3/1000 strokes : 7.0	control lever
	position degree : 70.0
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 11.0 +	-
+	control lever
Rated speed rpm : 325	position degree : 120.0
+	tolerance degree : + 4.0
Rack travel in mm: 4.60	
Tolerance mm : + 0.20 +	RATED SPEED
Del. quantity	40.00
cm3/1000 strokes : 25.0	rack travel mm : 10.00
Tolerance + 2.5 +	Rated speed rpm : 1235 Tolerance 1/min : +- 5
Check tolerance	roterance rimin : +- 3
cm3/1000s. : +- 5.0	rack travel mm : 4.00
Spreed	Rated speed rpm : 1280
Tolerance	Tolerance 1/min : +- 15
cm3/1000 strokes : 3.0	TO COT GITOC TANKING
Check tolerance	rack travel mm : 0.85
cm3/1000s. : 6.0	Tolerance mm : + 0.55
<del> </del>	Rated speed rpm : 1400
+	·
(B) SETTING OF INJECTION PUMP	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	LOW IDLE
WITH GOVERNOR	LOW IDLE
	LOW IDLE
GUIDE SLEEVE POSITION	LOW IDLE  control lever position degree : 80.0
WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION  Rated speed rpm : 800	LOW IDLE  control lever position degree : 80.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50	LOW IDLE  control lever position degree : 80.0 tolerance degree : +- 4.0  control lever
GUIDE SLEEVE POSITION  Rated speed rpm : 800	LOW IDLE  control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	LOW IDLE  control lever position degree : 80.0 tolerance degree : +- 4.0  control lever
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50	LOW IDLE  control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50  Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200	control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure	control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500	control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 325 rack travel mm : 4.60
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity	control lever position degree : 80.0 tolerance degree : +- 4.0  control lever position degree : 30.0 tolerance degree : +- 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 123.0	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 123.0 Tolerance	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10  rack travel mm : 2.00
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 123.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 390
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 123.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 390
GUIDE SLEEVE POSITION  Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 5.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1200 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 123.0 Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 80.0 tolerance degree : + 4.0  control lever position degree : 30.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 4.10  Testing:  Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 390

### TORQUE CONTROL Rated speed rpm 1200 11.00 rack travel mm : ← 0.05 Tolerance mm 700 Rated speed rpm rack travel mm 11.00 : + 0.10Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 1500 rack travel mm 11.00 Tolerance mm : +- 0.05 **MEASUREMENT** Pressure hPa Rated speed rpm 500 9.60 rack travel mm 0.10 Tolerance mm Rated speed rpm 500 490 Pressure hPa : 1.10 rack travel mm : + 0.15Tolerance mm 290 Pressure hPa 0.25 rack travel mm Tolerance mm : +- 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1500 700 Rated speed rpm Del. quantity cm3/1000 strokes : 136.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 7.0

11.0

Aneroid pressure hPa Rated speed rpm	:	- 500
Del. quantity cm3/1000 strokes Tolerance	:	95.0
cm3/1000 strokes	; +	- 1.0
Check tolerance cm3/1000s.	: +	- 4.0
BREAKAWAY	<del></del>	<del></del>

Rack travel in mm: 10.00
Rated speed rpm: 1235
Tolerance 1/min: + 5

### LOW IDLE

Rated speed rpm	: 325	
rack travel mm	: 4.60	
Tolerance mm	: + 0.20	
Del. quantity		
cm3/1000 strokes	: 25.0	
Tolerance		
cm3/1000 strokes	: <del>←</del> 2.5	
Check tolerance		
cm3/1000S.	: <del>+-</del> 5.0	
Spreed		
Tolerance		
cm3/1000 strokes	: 3.0	
Check tolerance		
cm3/1000s.	: 6.0	

End of test specification sheet

Check tolerance cm3/1000s.

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.12.95 Edition Test oil : ISO 4113

Combination No. : 0 402 046 850

Injection pump

Pump designation : PES6P120A320RS3320 EP type number : 0 412 026 763

Governor

Governer design. : RQV275...1000PA995

: -2

: 0 421 813 940 Governer no.

Cust. part No. : CCEP-5134 66-211

Customer-spec, information

Customer : RVI

: MIDR 063540 M/3 Motor

: 236.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : <del>←</del> 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : **←** 1.5

Test lines : 1 680 750 089 Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm 3.40 : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 19.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.55

Tolerance mm : + 0.05	†
Park annual 24.	Rated speed rpm : 393
Del. quantity cm3/1000 strokes : 242.0	<pre>f guide sleeve travel mm : 2.99</pre>
CIID/ 1000 Strokes . 242.0	Tolerance mm : + 0.20
Tolerance	+
cm3/1000 strokes : + 1.0	+ Rated speed rpm : 490
	+ guide steeve
Check tolerance cm3/1000s. : +- 4.0	travel mm : 3.81 Tolerance mm : + 0.20
CM37 10005 4.0	Toterance man : +- 0.20
Spreed	+ Rated speed rpm : 1370
Tolerance	+ guide sleeve
cm3/1000 strokes : 5.0	+ travel mm : 11.50
Check tolerance	† Tolerance mm : +- 0.50
cm3/1000s. : 9.0	
	↓ GUIDE SLEEVE POSITION
Rated speed rpm : 300	+
Deal description and 2.70	Rated speed rpm : 1180
Rack travel in mm : -7.40 Tolerance mm : +- 0.20	+ Rack travel in mm : 11.40
Del. quantity	+ Tolerance mm : +- 1.30
cm3/1000 strokes : 25.0	+
Tolerance	
cm3/1000 strokes : +- 2.0 Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : + 5.0	Rated speed rpm : 600
Spreed	Aneroid pressure
Tolerance	+ hPa : 1000
cm3/1000 strokes : 8.0	+ Del. quantity + cm3/1000 strokes : 242.0
Check tolerance cm3/1000s. : 12.0	+ cm3/1000 strokes : 242.0 + Tolerance
(10)	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
(8) SETTING OF INJECTION PUMP	+  cm3/1000s. : +- 4.0
WITH GOVERNOR	+ Spreed
	+ Tolerance + cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAVEL	Check tolerance
	- cm3/1000s. : 9.0
Rated speed rpm : 300	†
guide sleeve travel mm : 1.66	
Tolerance mm : +- 0.10	CONTROL LEVER
	+
Rated speed rpm : 1086	+ control lever
guide sleeve travel mm : 8.46	<pre>position degree : 306.0 tolerance degree : +- 4.0</pre>
Tolerance mm : + 0.10	T coterante degree . 4.0
roce, arroc limb	+ RATED SPEED
Rated speed rpm : 773	†
guide sleeve	+ rack travel mm : -1.00
travel mm : 6.09 Tolerance mm : +- 0.20	+ Rated speed rpm : 1075 + Tolerance 1/min : +- 5
10to and and 10to	+
Rated speed rpm : 343	+ rack travel mm : -8.55
guide sleeve	+ Rated speed rpm : 1195
travel mm : 2.33 Tolerance mm : + 0.20	† Tolerance 1/min : +- 15
TOLET GING ISII U.LU	1

rack travel mm Toleranče mm Rated speed rpm	: +- 0.55	Pressure hPa : 280 rack travel mm : -0.75 Tolerance mm : + 0.05
LOW IDLE		START CUT-OUT
FOM THE		Rated speed rpm : > 100 Rated speed rpm : < 195
control lever position degrée tolerance degrée	: 248.0 : + 4.0	Check + speed 1/min : > 80 + Check
Testing:		speed 1/min : < 215
Rated speed rpm rack travel mm Tolerance mm	: -7.40	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	+ Aneroid pressure + hPa : 1000
CRT mm max.		Rated speed rpm : 1000 Del. quantity
Rated speed rpm	: 365	cm3/1000 strokes : 230.0 Tolerance
TORQUE CONTROL		+ cm3/1000s. : +- 6.0
Rated speed rpm	: 600	Aneroid pressure hPa : 1000
Rated speed rpm Tolerance mm		Aneroid pressure  hPa : 1000  Rated speed rpm : 600  Del. quantity  cm3/1000 strokes : 114.0  Tolerance  cm3/1000 strokes : + 5.0
Rated speed rpm	: 600 : -4.00	Tolerance : + 5.0
rack travel mm Tolerance mm	: + 0.10	Check tolerance cm3/1000s. : + 8.0 Spreed
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance cm3/1000 strokes : 10.0
		+ Check tolerance + cm3/1000S. : 14.0
SETTING		+ Aneroid pressure
Rated speed rpm Pressure hPa	: 500 : 1000	+ hPa : - Rated speed rpm : 500
MEASUREMENT		+ Del. quantity + cm3/1000 strokes : 156.0
Pressure hPa	: -	+ Tolerance + cm3/1000 strokes : + 1.0
Rated speed rpm rack travel mm Tolerance mm	: 500 : -2.25 : +- 0.20	+ Check tolerance + cm3/1000s. : + 4.0
Rated speed rpm	: 500	BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 160 : -1.70 : +- 0.10	Rack travel in mm: -1.00 Rated speed rpm: 1075 Tolerance 1/min: +- 5

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance cm3/1000s. : +- 19.0

## LOW IDLE

300 Rated speed rpm -7.40 rack travel mm Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 18.12.95 Edition : ISO 4113 Test oil Combination No. : 0 402 076 787 Injection pump Pump designation : PES6P120A720RS3340 EP type number : 0 412 026 773 Governor Governer design. : RSV400...1050P0A602 : 0 421 833 483 Governer no. Cust. part No. : Customer-spec. information Customer : FNH-GEOTECH : EP040B Motor Power KW : 176.0 TEST BENCH REQUIREMENTS : 4.2 Inlet line Test oil inlet temp. °C Tolerance °C Overflow valve : 2 417 413 086 1.5 Inlet press. bar : Tolerance bar : + 0.1 Overflow quantity 100 min. L/h Tolerance L/h: +- 20.0

: 1 688 901 103

208.5

: +- 1.5

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600 REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____ BEGINNING OF DELIVERY Test pressure bar: 26.0 Tolerance bar : + 1.0 Prestroke mm 3,60 : + 0.05Tolerance mm Check tolerance mm : +- 0.10 Rack travel in mm: 10.50 : +- 1.50 Tolerance mm : 1-5-3-6-2-Firing order : 4 Phasing : 0-60-120-180-240 : -300 Tolerance : +- 0.30 Check : +- 0.75 tolerance "NW Start of delivery blocking Check tolerance °NW : +- 0.30 Barrel no. : 1 BASIC SETTING Rated speed rpm : 1050

Test lines : 1 680 750 089

bar

Test nozzle holde

Opening pressure

Tolerance bar

assembly

Rack travel in mm: 11.25 Tolerance mm: + 0.05  Del. quantity cm3/1000 strokes: 158.0  Tolerance cm3/1000 strokes: + 1.0  Check tolerance cm3/1000s. : + 5.0	Del. quantity cm3/1000 strokes : 158.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Spreed Tolerance cm3/1000 strokes : 5.0 -	CONTROL LEVER  control lever
Check tolerance - cm3/1000s. : 9.0 -	position degree : 96.0
Rated speed rpm : 400	RATED SPEED
5.00	rack travel mm : 0.85
Rack travel in mm: 5.00	Tolerance mm : +- 0.55 Rated speed rpm : 1320
Tolerance mm : + 0.20 -	Rated speed rpm : 1320
Del. quantity - cm3/1000 strokes : 26.0 -	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1165
cm3/1000 strokes : +- 3.0	hated speed (pill : 1105
Check tolerance	ASSEMBLY GOVERNOR SETTING
	ASSEMBLY GOVERNOR SETTING
cm3/1000s. : $\leftarrow$ 6.0	Detail aread arm 1007
Spreed	Rated speed rpm : 1093
Tolerance	rack travel mm : 10.20
cm3/1000 strokes : 8.0	t
Check tolerance	Rated speed rpm : 1158
cm3/1000s. : 12.0	Tolerance 1/min : + 5
7	frack travel mm : 4.00
<del>1</del>	+
(B) SETTING OF INJECTION PUMP	rack travel mm : 0.85
WITH GOVERNOR	Tolerance mm : +- 0.55
4	Rated speed rpm : 1320
<del>-</del>	
	Rated speed rpm : 1094
GUIDE SLEEVE POSITION	rack travel mm : 10.20
3	-
Rated speed rpm : 800	Rated speed rpm : 1159
· · ·	Tolerance 1/min : +- 5
Rack travel in mm: 0.50	rack travel mm : 4.00
Tolerance mm : +- 0.20	<b>-</b>
	rack travel mm : 0.85
governor spring	- Tolerance mm : +- 0.55
pre-tension	-
click setting x : 4.75	Rated speed rpm : 1095
orion secting A	rack travel mm : 10.20
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1160
TOLL LUND DELIVERY MY TOLL LUND OTOL	- Tolerance 1/min : +- 5
Poted around from 1050	rack travel mm : 4.00
Rated speed rpm : 1050	TAUN CLAVEL IIIII . 4.00
Aneroid pressure hPa : 1600	rack travel mm : 0.85
hPa : 1600	Tolerance mm : + 0.55
7	- Toterance mm : T U.33

Rated speed rpm	: 1096
rack travel mm	: 10.20
Rated speed rpm	: 1161
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1097
rack travel mm	: 10.20
Rated speed rpm	: 1162
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1098
rack travel mm	: 10.20
Rated speed rpm	: 1163
Tolerance 1/min	: + 5
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
LOW IDLE	
control lever position degree	: 75.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 400
rack travel mm	: 4.50
Testing:	
Rated speed rpm	: 400
rack travel mm	: 5.00
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 535
Tolerance 1/min	: <del>+-</del> 50
TORQUE CONTROL	

Rated speed rpm	: 700
rack travel mm	: 12.40
Tolerance mm	: +- 0.05
Rated speed rpm	: 600
rack travel mm	: 12.50
Tolerance mm	: +- 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 500
Pressure hPa	: 1600
rack travel mm	: 12.50
Tolerance mm	: + 0.10
MEASUREMENT	
Pressure hPa	: -
Rated speed rpm	: 500
rack travel mm	: 8.10
Tolerance mm	: +- 0.10
Rated speed rpm	: 500
Pressure hPa	: 980
rack travel mm	: 11.40
Tolerance mm	: + 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1600
Rated speed rpm	:	700
Del. quantity		401.0
cm3/1000 strokes	:	196.0
Tolerance cm3/1000 strokes	• 4.	- 3.0
Check tolerance	• '	5.0
cm3/1000s.	: +-	- 6.0
Aneroid pressure		
hPa	.:	<del>-</del>
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	94.0
Tolerance		
cm3/1000 strokes	: +-	- 1.0
Check tolerance		, -
cm3/1000s.	· +-	- 4.0

Rated speed rpm : 1050 rack travel mm : 11.25 Tolerance mm : + 0.05

Rated speed rpm rack travel mm	:		100 20.50
Tolerance mm	:	+-	0.50
Del. quantity			450.0
cm3/1000 strokes	:		150.0
Tolerance			45.5
cm3/1000 strokes	:	+-	15.0
Check tolerance			
cm3/1000s.	: .	+-	19.0

## LOW IDLE

Rated speed rpm	:		400
rack travel mm	:		5.00
Tolerance mm	:	+	0.20
Del. quantity			
cm3/1000 strokes	:		26.0
Tolerance			
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+-	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0
Check tolerance			
cm3/1000s.	:		12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 18.12.95 Test oil : ISO 4113

Combination No. : 0 402 076 788

Injection pump

Pump designation : PES6P120A720RS3340

EP type number : 0 412 026 773

Governor

Governer design. : RSV400...1050P0A603

Governer no. : 0 421 833 484

Cust. part No. :

Customer-spec. information

Customer : FNH-GEOTECH Motor : EP 040 B

Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 100 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.75

Start of delivery blocking

Check

tolerance *NW : +- 0.30

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

_____

	1	Dol guantity	
Rack travel in mm Tolerance mm	: 10.45 : +- 0.05	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
Del. quantity cm3/1000 strokes	: 136.0	Check tolerance cm3/1000s.	: + 5.0
Tolerance cm3/1000 strokes	: + 1.0	Spreed Tolerance cm3/1000 strokes Check tolerance	: 5.0
Check tolerance cm3/1000s.	: + 5.0	cm3/1000s.	: 9.0
Spreed Tolerance cm3/1000 strokes	: 5.0	CONTROL LEVER	
Check tolerance cm3/1000s.	9.0	control lever position degree tolerance degree	
Rated speed rpm	: 400	RATED SPEED	
Rack travel in mm Tolerance mm Del. quantity	: +- 0.20	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1320
cm3/1000 strokes Tolerance cm3/1000 strokes	+	rack travel mm Rated speed rpm	: 4.00 : 1155
Check tolerance cm3/1000s. Spreed	: + 6.0	ASSEMBLY GOVERNOR	R SETTING
Tolerance cm3/1000 strokes Check tolerance	: 8.0	Rated speed rpm rack travel mm	
cm3/1000s.	: 12.0	Rated speed rpm Tolerance 1/min rack travel mm	
(B) SETTING OF INWITH GOVERNOR	JECTION PUMP	rack travel mm Tolerance mm	: 0.85
GUIDE SLEEVE POSI	TION	Rated speed rpm rack travel mm	: 1094 : 9.45
Rated speed rpm	: 800	Rated speed rpm Tolerance 1/min	
Rack travel in mm Tolerance mm		rack travel mm	: 4.00
governor spring pre-tension	+	rack travel mm Tolerance mm	
click setting x	: 5.00	Rated speed rpm rack travel mm	: 1095 : 9.45
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	Rated speed rpm Tolerance 1/min	
Rated speed rpm Aneroid pressure	: 1050	rack travel mm	: 4.00
hPa	: 1500	rack travel mm Tolerance mm	: 0.85 : + 0.55

		1
Rated speed rpm rack travel mm		Rated speed rpm rack travel mm Tolerance mm
Rated speed rpm Tolerance 1/min rack travel mm	: 1156 : + 5 : 4.00	Rated speed rpm rack travel mm
rack travel mm Tolerance mm	: 0.85 : + 0.55	Tolerance mm
Rated speed rpm rack travel mm	: 1097 : 9.45	ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm Tolerance 1/min rack travel mm	: 1157 : +- 5 : 4.00	SETTING Rated speed rpm
rack travel mm Tolerance mm	: 0.85 : + 0.55	Pressure hPa rack travel mm Tolerance mm
Rated speed rpm rack travel mm		MEASUREMENT
Rated speed rpm Tolerance 1/min rack travel mm	: 1158 : ← 5 : 4.00	Pressure hPa Rated speed rpm rack travel mm Tolerance mm
rack travel mm Tolerance mm	: 0.85 : ← 0.55	Rated speed rpm Pressure hPa
LOW IDLE		rack travel mm Tolerance mm
control lever position degree tolerance degree		FUEL DELIVERY CHA
Setting point w/c	out bumper spring	Aneroid pressure hPa
Rated speed rpm rack travel mm	: 400 : 5.00	Rated speed rpm Del. quantity cm3/1000 strokes
Testing:		+ Tolerance + cm3/1000 strokes
Rated speed rpm rack travel mm Tolerance mm	: 400 : 4.50 : +- 0.10	theck tolerance cm3/1000s.
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 535 : +- 50	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance
TORQUE CONTROL		+ cm3/1000 strokes + Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 10.45 : + 0.05	cm3/1000s.

Rated speed rpm rack travel mm Tolerance mm	: 11.30 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.35 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 11.30 : + 0.10
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 900 : 10.80 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 750 : 167.0 : +- 3.0
Check tolerance cm3/1000s.	: +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 92.0
roterante	

4.0

: +- 1.0

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

## LOW IDLE

400 Rated speed rpm rack travel mm 5.00 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 23.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +--Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition

: 19.12.95

Edition : 19.12.95 Test oil : ISO 4113

Combination No. : 0 402 640 817

Injection pump

Pump designation : PE12P120A520LS7826

EP type number : 0 412 620 817

Governor

Governer design. : RQV350...1150PA870

: -4

Governer no. : 0 421 813 717

Cust. part No. : 0180745402

Customer-spec. information

Customer : MB-NFZ Motor : OM 444 Power KW : 736.0 : OM 444 LA

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Overflow quantity min. l/h : 160 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.00 Tolerance mm : + 1.00

Firing order : 12-1-5-9-8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345 Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 15.30

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 306.0

	+	Tolerance mm : + 0.25
Tolerance cm3/1000 strokes	: + 1.0	
Check tolerance		GUIDE SLEEVE POSITION
cm3/1000s.	: +- 4.0	Rated speed rpm : 1275
Spreed	+	Rack travel in mm : 16.50
Tolerance cm3/1000 strokes	: 6.0	Tolerance mm : +- 1.30
Check tolerance cm3/1000s.	: 10.0	FULL LOAD DELIVERY AT FULL LOAD STOP
CID/1005.	1	Rated speed rpm : 1150
Rated speed rpm	: 350	Aneroid pressure hPa : 1300
Rack travel in m	m: 5.60 +	Del. quantity
Tolerance mm	: ← 0.30 +	cm3/1000 strokes : 306.0
Del. quantity	+	Tolerance
cm3/1000 strokes	: 15.0 +	cm3/1000 strokes : + 1.0
Tolerance	†	Check tolerance
cm3/1000 strokes	: + 3.0 +	cm3/1000s. : +- 4.0
Check tolerance cm3/1000s.	: + 6.0	Spreed Tolerance
Spreed	· - 0.0	cm3/1000 strokes : 6.0
Tolerance	1	Check tolerance
cm3/1000 strokes	: 8.0 ↓	cm3/1000s. : 10.0
Check tolerance	+	
cm3/1000s.	: 12.0	
	Ī	CONTROL LEVER
(B) SETTING OF I	VIECTION DIMP	CONTROL LEVER
WITH GOVERNOR	102012014 1 0111	control lever
W2777 00021111011	1	position degree : 117.0
		tolerance degree : + 4.0
GUIDE SLEEVE TRAN	VEL +	RATED SPEED
Rated speed rpm	: 350	
guide sleeve	+	rack travel mm : 14.30
travel mm	: 1.55	Rated speed rpm : 1195
Tolerance mm	: +- 0.20	Tolerance 1/min : +- 5
Rated speed rpm	: 1206	rack travel mm : 4.00
guide sleeve	<b>†</b>	Rated speed rpm : 1285
travel mm	: 8.15 <del> </del>	Tolerance 1/min : + 15
Tolerance mm		
Detroi speed non	: + 0.15	mack thavel mm . 0.50
Rated speed rpm		rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350
guide sleeve	: + 0.15 : 600	
guide sleeve travel mm	: + 0.15 : 600 : 3.55	Tolerance mm : +- 0.50
guide sleeve	: + 0.15 : 600	Tolerance mm : +- 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm	: + 0.15 : 600 : 3.55	Tolerance mm : +- 0.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: + 0.15 : 600 : 3.55 : + 0.25 : 960	Tolerance mm : + 0.50 Rated speed rpm : 1350
guide sleeve travel mm Tolerance mm Rated speed rpm	: + 0.15 : 600 : 3.55 : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1350
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: + 0.15 : 600 : 3.55 : + 0.25 : 960 : 5.55 : + 0.25	Tolerance mm : + 0.50 Rated speed rpm : 1350  LOW IDLE  centrol lever position degree : 66.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: + 0.15 : 600 : 3.55 : + 0.25 : 960 : 5.55	Tolerance mm : + 0.50 Rated speed rpm : 1350  LOW IDLE  centrol lever

Rated speed rpm rack travel mm Tolerance mm	: 5.60	theck speed 1/min : < 330
Rated speed rpm		FUEL DELIVERY CHARACTERISTICS
CRT mm min.		Aneroid pressure hPa : 1300 Rated speed rpm : 750
Andrei anned con		+ Rated speed rpm : 750
Rated speed rpm	: 475	Del. quantity cm3/1000 strokes : 315.0 Tolerance
TORQUE CONTROL		cm3/1000 strokes : +- 5.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 15.30 : + 0.05	cm3/1000s. : + 8.0 Spreed Tolerance
		+ cm3/1000 strokes : 10.0
Rated speed rpm	: 750	+ Check tolerance + cm3/1000s. : 15.0
Rated speed rpm rack travel mm Tolerance mm	: 15.40 · +- 0.10	cm3/1000s. : 15.0
ANEROID/ALTITUDE	. +- 0.10	Aneroid pressure hPa : 1300 Rated speed rpm : 1150
COMPENSATOR TEST		→ Del. quantity
		+ cm3/1000 strokes : 234.5 + Tolerance
SETTING		+ cm3/1000 strokes : + 1.5 + Check tolerance
Rated speed rpm Pressure hPa	: 500 : 1300	+ cm3/1000s. : +- 4.5 + Spreed
rack travel mm Tolerance mm	: +- 0.05	+ Tolerance + cm3/1000 strokes : 10.0 + Check tolerance
MEASUREMENT		cm3/1000s. : 15.0
Pressure hPa	; -	+ Aneroid pressure
Rated speed rpm	: 500	+ hPa : -
rack travel mm	: 8.45	Rated speed rpm : 500
Tolerance mm	: + 0.15	+ Del. quantity + cm3/1000 strokes : 124.0
Rated speed rpm	: 500	+ Tolerance
	700	+ cm3/1000 strokes : + 1.0
Pressure hPa rack travel mm Tolerance mm		theck tolerance cm3/1000s. : + 4.0 tolerance
Pressure hPa	: 1100 : 13.80	Tolerance cm3/1000 strokes : 10.0 Check tolerance
rack travel mm Tolerance mm	: + 0.15	cm3/1000s. : 15.0
START CUT-OUT		BREAKAWAY
Rated speed rpm Rated speed rpm		Rack travel in mm : 14.30 Rated speed rpm : 1195
Check speed 1/min	: > 180	+ Tolerance 1/min : +- 5

Rated speed rpm : 100

Del. quantity cm3/1000 strokes :

331.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s.

: + 14.0

## LOW IDLE

350 Rated speed rpm : rack travel mm 5.60 : +- 0.30 Tolerance mm

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

8.0 cm3/1000 strokes :

Check tolerance

12.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 14.12.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 640 842

Injection pump

Pump designation : PE12P120A520/5RS7304

EP type number : 0 412 620 838

Governor

Governer design. : RQV300...550/1050PA1

: 093

: 0 421 814 067 Governer no.

Cust. part No. :

Customer-spec. information

: MWM Customer

Motor

: TBD234-FAUN

TEST BENCH REQUIREMENTS

Inlet line : 3.1.3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Overflow quantity

170 min. L/h : + 10.0 Tolerance L/h

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar - 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

5.20 Prestroke mm

: +- 0.05Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 19.50

Tolerance mm :  $\leftarrow$  1.50

: 1-2-9-10-5-6 Firing order

: - 11- 12- 3- 4 : - 7- 8

Phasing : 0-30-60-90-120-150

: -180-210-240-270

: -300-330

: +- 0.30 Tolerance

Check

: + 0.50tolerance °NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.60 Tolerance mm : - 0.05

Del. quantity

cm3/1000 strokes : 235.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance		<pre>+ guide sleeve + travel mm : 6.00</pre>
cm3/1000S.	; <del>+-</del> 4.0	Tolerance mm : +- 0.25
Chor (0005:	· - 4.0	T roter ance min . The b.25
Spreed		Rated speed rpm : 1260
Tolerance		+ guide sleeve
cm3/1000 strokes	: 6.0	travel mm : 11.50
CHIDY TODO SETURES	. 0.0	Tolerance mm : + 0.50
Check tolerance		T roterance mm . 1 0.50
cm3/1000s.	; 9.0	
C (0000.	. ,,0	GUIDE SLEEVE POSITION
Rated speed rpm	: 300	T GOING OCCEPTE 1 GOITTON
Racea speed 1 pm	. 505	+ Rated speed rpm : 1160
Rack travel in mm	• 6.75	indeed opeed ipin . Itou
Tolerance mm		Rack travel in mm: 14.00
Del. quantity		+ Tolerance mm : +- 1.00
cm3/1000 strokes	: 38.0	1 Oceranice limit
Tolerance		
cm3/1000 strokes	: +- 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		The world becautiful in the world by
cm3/1000s.	: <del>+</del> 8.0	Rated speed rpm : 1050
Spreed		+ Aneroid pressure
Tolerance	•	+ hPa : 1250
cm3/1000 strokes	: 8.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 235.0
cm3/1000S.	: 12.0	Tolerance
<b></b>		+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
(B) SETTING OF INJ	ECTION PUMP	+  cm3/1000s. : + 4.0
WITH GOVERNOR		Spreed
		Tolerance
		Tolerance + cm3/1000 strokes : 6.0
GUIDE SLEEVE TRAVE	L -	Tolerance cm3/1000 strokes : 6.0 Check tolerance
		Tolerance + cm3/1000 strokes : 6.0
Rated speed rpm	L : 300 -	Tolerance cm3/1000 strokes : 6.0 Check tolerance
Rated speed rpm guide sleeve	: 300	Tolerance cm3/1000 strokes : 6.0 Check tolerance
Rated speed rpm guide sleeve travel mm	: 300 : 1.30	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
Rated speed rpm guide sleeve	: 300	Tolerance cm3/1000 strokes : 6.0 Check tolerance
Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER
Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 300 : 1.30 : + 0.25 : 1107	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER control lever
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 300 : 1.30 : + 0.25 : 1107	Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000s.: 9.0  CONTROL LEVER  control lever position degree: 51.0 tolerance degree: + 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050	Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000s.: 9.0  CONTROL LEVER  control lever position degree: 51.0 tolerance degree: + 4.0  control lever position degree: 115.0 tolerance degree: + 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm travel mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586 : 5.55 : + 0.25	Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000s.: 9.0  CONTROL LEVER  control lever position degree: 51.0 tolerance degree: + 4.0  control lever position degree: + 4.0  RATED SPEED  rack travel mm: 13.70 Rated speed rpm: 1095 Tolerance 1/min: + 5  rack travel mm: 4.00
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586	Tolerance cm3/1000 strokes: 6.0 Check tolerance cm3/1000s.: 9.0  CONTROL LEVER  control lever position degree: 51.0 tolerance degree: + 4.0  control lever position degree: + 4.0  RATED SPEED  rack travel mm: 13.70 Rated speed rpm: 1095 Tolerance 1/min: + 5  rack travel mm: 4.00 Rated speed rpm: 1155
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586 : 5.55 : + 0.25 : 636	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1155
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586 : 5.55 : + 0.25 : 636 : 6.00	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1155 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586 : 5.55 : + 0.25 : 636	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1155 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 300 : 1.30 : + 0.25 : 1107 : 6.75 : + 0.25 : 1050 : 6.00 : + 0.25 : 586 : 5.55 : + 0.25 : 636 : 6.00	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 51.0 tolerance degree : + 4.0  control lever position degree : 115.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.70 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1155 Tolerance 1/min : + 15  rack travel mm : 0.50

	†	Rated speed rpm : 500
LOW IDLE		Pressure hPa : 225 rack travel mm : 10.70 Tolerance mm : + 0.25
control lever position degree tolerance degree	: 85.0 : +- 4.0	Pressure hPa : 595 rack travel mm : 12.20 Tolerance mm : + 0.05
control lever position degree tolerance degree	: 20.0 : + 4.0	Pressure hPa : 1250 rack travel mm : 13.60 Tolerance mm : + 0.05
Testing:	Ţ	Pressure hPa : 1450
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.75 : ← 0.10	rack travel mm : 13.95 Tolerance mm : +- 0.25
Rated speed rpm	+	START CUT-OUT
CRT mm min.	+	Rated speed rpm : > 100 Rated speed rpm : < 220
Rated speed rpm	: 300	Check speed 1/min : > 80
TORQUE CONTROL	+	Check speed 1/min : < 240
Rated speed rpm	: 1050 +	<del></del>
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm Tolerance mm Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: 13.60 : + 0.05 : 800 : 13.60 : + 0.05 : 500 : 14.70 : + 0.05	Aneroid pressure hPa : 1250 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 234.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 144.0 Tolerance
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: 13.60 : + 0.05 : 800 : 13.60 : + 0.05 : 500 : 14.70	Aneroid pressure hPa : 1250 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 234.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 144.0
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm Pressure hPa rack travel mm	: 13.60 : + 0.05 : 800 : 13.60 : + 0.05 : 500 : 14.70 : + 0.05	Aneroid pressure hPa : 1250 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 234.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0  Aneroid pressure hPa : Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 144.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance

Rated speed rpm 100 20.50 rack travel mm Tolerance mm : **←** 0.50 Del. quantity

cm3/1000 strokes : 274.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : + 14.0

## LOW IDLE

300 Rated speed rpm 6.75 rack travel mm 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes 5.0 Check tolerance cm3/1000S. 8.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance 12.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 606

Injection pump

Pump designation : PE6P12OA72ORS7188

: -100

EP type number : 0 412 626 925

Governor

Governer design. : RQV200...950PA725

: -10

Governer no. : 0 421 814 002

Cust. part No. : 1338073

Customer-spec. information Customer : SCANIA : DSC 11 32 Motor

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : +- 0.1

Test nozzle holde : 1 688 901 104

Opening pressure

: 251.5 bar Tolerance bar : +- 1.5 Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm. : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ÷- 0.30

Check

tolerance "NW : + 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 12.55 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 214.0

G03

Tolerance cm3/1000 strokes	: + 1.0 ‡		
	· · · · · · · · · · · · · · · · · · ·	CONTROL LEVER	
Check tolerance cm3/1000s.	: + 4.0	control lever	50.0
Spreed		position degree tolerance degree	
Tolerance cm3/1000 strokes	: 8.0	control lever position degree	: 114.0
Check tolerance cm3/1000s.	: 12.0	tolerance degree	
Rated speed rpm	: 250 +	RATED SPEED	
	+	rack travel mm	: 11.50
	: 4.70 : + 0.30	Rated speed rpm Tolerance 1/min	: 995 : +- 5
Del. quantity cm3/1000 strokes Tolerance	: 16.0	rack travel mm Rated speed rpm	: 4.00 : 1105
cm3/1000 strokes :	: +- 3.0	Tolerance 1/min	
	: + 6.0	rack travel mm Tolerance mm	: 0.50 : + 0.50
Tolerance	+	Rated speed rpm	
cm3/1000 strokes : Check tolerance	: 4.0		
	: 8.0	LOUIDIE	
	<u> </u>	LOW IDLE	
(B) SETTING OF INJE	ECTION PUMP		
WITH GOVERNOR	1	control lever position degree	: 64.0
	+	tolerance degree	
GUIDE SLEEVE POSITI	ION	control lever	
Rated speed rpm :	: 1140 ‡	position degree tolerance degree	
Rack travel in mm :	+	Testing:	7.0
	+ 2.50	_	
	<u>†</u>	Rated speed rpm rack travel mm	: 250 : 4.70
FULL LOAD DELIVERY	AT FULL LOAD STOP	Tolerance mm	: + 0.10
Rated speed rpm : Aneroid pressure	700	Rated speed rpm	: 150
hPa : Del. quantity	3		
	·	CRT mm min.	: > 6.00
cm3/1000 strokes :	214.0	Rated speed rpm	: > 6.00 : 275
cm3/1000 strokes : Tolerance cm3/1000 strokes :	214.0	Rated speed rpm	
cm3/1000 strokes : Tolerance	+		: 275
cm3/1000 strokes : Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : Spreed	+ 1.0	Rated speed rpm TORQUE CONTROL Rated speed rpm	: 275 : 700
cm3/1000 strokes: Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.: Spreed Tolerance cm3/1000 strokes:	+ 1.0 + 4.0	Rated speed rpm TORQUE CONTROL	: 275
cm3/1000 strokes: Tolerance cm3/1000 strokes: Check tolerance cm3/1000s.: Spreed Tolerance	+ 1.0 + 4.0 8.0	Rated speed rpm TORQUE CONTROL Rated speed rpm rack travel mm	: 275 : 700 : 12.55

Tolopopo m	: +- 0.05	1
Tolerance mm		Rack travel in mm: 11.50 Rated speed rpm: 995
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance 1/min : + 5
SETTING		STARTING FUEL DELIVERY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm		Rated speed rpm : 100 rack travel mm : 10.40 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 165.0
MEASUREMENT		+ Tolerance + cm3/1000 strokes : +- 20.0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.40 : + 0.20	Check tolerance   cm3/1000s. : +- 24.0
Rated speed rpm	: 500	LOW IDLE
Pressure hPa rack travel mm Tolerance mm Pressure hPa	: 270 : 11.00 : +- 0.15 : 440	Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : +- 0.30 Del. quantity
rack travel mm Tolerance mm	: 12.05 : + 0.05	- cm3/1000 strokes : 16.0 - Tolerance - cm3/1000 strokes : + 3.0 - Check tolerance - cm3/1000s. : + 6.0 - Spreed
FUEL DELIVERY CHA	RACTERISTICS	Tolerance + cm3/1000 strokes : 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 950	Check tolerance cm3/1000s. : 8.0
cm3/1000 strokes Tolerance	: 202.0	<del>-</del>
cm3/1000 strokes Check tolerance	: <del>+</del> 4.0	
cm3/1000s.	: +- 6.0	End of test specification sheet
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - 500 : 153.0 : + 1.0 : + 4.0	† † † † †
BREAKAWAY		‡

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15,12,95 Edition Test oil : ISO 4113

Combination No. : 0 402 646 650

Injection pump

Pump designation : PE6P130A720RS7354 EP type number : 0 412 636 835

Governor

Governer design. : RQV300...950PA1002

: -2K

: 0 421 815 434 Governer no.

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE : 8210.42.4000 Motor

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 : +- 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 : +- 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 5.05 Prestroke mm : +- 0.05 Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm: 13.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Check

tolerance °NW : **←** 0.40

Barrel no. : 1

#### BASIC SETTING

950 Rated speed rpm :

Rack travel in mm: 13.10 Tolerance mm : +~ 0.05

Del. quantity

cm3/1000 strokes : 274.0

Tolerance

cm3/1000 strokes : +-1.0

	+	
Check tolerance cm3/1000s.	: +- 4.0	GUIDE SLEEVE POSITION
Spreed Tolerance cm3/1000 strokes	; 5.0	Rated speed rpm : 1185  Rack travel in mm : 12.00
Check tolerance	+	Tolerance mm : + 1.30
cm3/1000s. Rated speed rpm	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 4.80	Rated speed rpm : 950 Aneroid pressure
Tolerance mm Del. quantity	: +- 0.20	hPa : 900 Del. quantity
cm3/1000 strokes Tolerance cm3/1000 strokes	+	cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s.	: + 6.0	Check tolerance cm3/1000s. : + 4.0
Spreed Tolerance	+	Spreed Tolerance
cm3/1000 strokes Check tolerance	+	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000S.	: 12.0	cm3/1000s. : 9.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	CONTROL LEVER
GUIDE SLEEVE TRAVE	EL ±	control lever position degree : 114.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 300	RATED SPEED
travel mm Tolerance mm	: 1.65 : + 0.20	rack travel mm : 12.10 Rated speed rpm : 995
Rated speed rpm guide sleeve	: 1010	Tolerance 1/min : +- 5
travel mm Tolerance mm	: 8.75 : + 0.15	rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 755	rack travel mm : 0.50
travel mm Tolerance mm	: + 6.15 : + 0.25	Tolerance mm : +- 0.50 Rated speed rpm : 1300
Rated speed rpm guide sleeve	: 500	
travel mm Tolerance mm	: 3.75 : + 0.25	LOW IDLE
Rated speed rpm guide sleeve	: 1340	control lever position degree : 69.0
travel mm Tolerance mm	: 13.50 : ← 0.50	tolerance degree : +- 4.0
	‡	Testing:

Rated speed rpm rack travel mm	: 4.80	+ Check + speed 1/min :> 160
Tolerance mm Rated speed rpm		+ Check - speed 1/min : < 240
TORQUE CONTROL		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.10 : ← 0.05	Aneroid pressure hPa : 900 Rated speed rpm : 550 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 12.90	+ cm3/1000 strokes : 286.0 + Tolerance + cm3/1000 strokes : +- 3.0 + Check tolerance + cm3/1000s. : +- 6.0
Rated speed rpm rack travel mm Tolerance mm	: 550 : 12.10 : ← 0.10	Aneroid pressure hPa : - Rated speed rpm : 550
Rated speed rpm rack travel mm Tolerance mm	: 11.80	<pre>Del. quantity     cm3/1000 strokes : 173.0     Tolerance     cm3/1000 strokes : +- 1.0</pre>
ANEROID/ALTITUDE COMPENSATOR TEST		- Check tolerance - cm3/1000S. : +- 4.0
SETTING		+ BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 950 : 900 : 13.10 : +- 0.05	Rack travel in mm : 12.10 Rated speed rpm : 995 Tolerance 1/min : +- 5
MEASUREMENT		STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 950 : 8.60 : +- 0.20	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 154.0  Tolerance
Rated speed rpm	: 950	cm3/1000 strokes : + 15.0 Check tolerance
Pressure hPa rack travel mm Tolerance mm	: 320 : 9.95 : +- 0.20	cm3/1000s. : + 19.0
Pressure hPa rack travel mm Tolerance mm	: 610 : 12.20 : + 0.05	LOW IDLE  Rated speed rpm : 300
START CUT-OUT		rack travel mm : 4.80 Tolerance mm : + 0.20
Rated speed rpm Rated speed rpm	: > 180 : < 220	<pre>Del. quantity     cm3/1000 strokes : 22.0     Tolerance     cm3/1000 strokes : + 3.0</pre>

Check tolerance cm3/1000s. 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.

12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 20.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 887

Injection pump

Pump designation : PE6P12OA72ORS7188

: -10

EP type number : 0 412 626 924

Governor

Governer design. : RQV200...950PA725-7

Governer no. : 0 421 813 803

Cust. part No. : 1333122

Customer-spec. information

Customer : SCANIA Motor : DSC 11 23

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 190 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.85
Tolerance mm: +- 0.05

·

	1	Tolerance
Del. quantity cm3/1000 strokes	: 252.0	cm3/1000 strokes : 8.0 Check tolerance
Tolerance cm3/1000 strokes	: + 1.0	cm3/1000s. : 12.0
Check tolerance		CONTROL LEVER
cm3/1000s. Spreed	: + 4.0	control lever, position degree : 60.0
Tolerance cm3/1000 strokes	: 8.0	tolerance degree : + 4.0
Check tolerance cm3/1000s.	: 12.0	position degree : 114.0 tolerance degree : +- 4.0
Rated speed rpm	: 250	RATED SPEED
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: + 0.30	rack travel mm : 12.80 Rated speed rpm : 995 Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes Check tolerance	+	rack travel mm : 4.00 Rated speed rpm : 1125 Tolerance 1/min : + 15
cm3/1000s. Spreed Tolerance	: + 6.0	rack travel mm : 0.50 Tolerance mm : + 0.50
cm3/1000 strokes Check tolerance cm3/1000s.	: 4.0	Rated speed rpm : 1250
tile) 10000.	. 0.0	LOW IDLE
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	
		control lever position degree : 64.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSI	TION +	_
Rated speed rpm	+	control lever  position degree : 10.0  tolerance degree : +- 4.0
Rack travel in mm Tolerance mm		Testing:
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm : 250 rack travel mm : 4.70 Tolerance mm : +- 0.10
Rated speed rpm Aneroid pressure	: 700	Rated speed rpm : 150
hPa Del. quantity cm3/1000 strokes	: 252.0	CRT mm min. :> 6.00
Tolerance cm3/1000 strokes	+	Rated speed rpm : 300
Check tolerance cm3/1000s.	†	TOROUG CONTROL
Spreed	: +- 4.0	TORQUE CONTROL

rack travel mm Tolerance mm	: 13.85 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 13.85 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 270 : 11.00 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 440 : 12.05 : +- 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	•
hPa Rated speed rpm Del. quantity	950
cm3/1000 strokes Tolerance	: 237.0
cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: +- 6.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 153.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: +- 4.0

Rack travel in mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : + 5

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 165.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

## LOW IDLE

Rated speed rpm 250 4.70 rack travel mm Tolerance mm : + 0.30Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

End of test specification sheet

BREAKAWAY

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.12.95 Test oil : ISO 4113

Combination No. : 0 402 646 937

Injection pump

Pump designation : PE6P12OA72ORS7188

: -100

EP type number : 0 412 626 925

Governor

Governer design. : RQV200...950PA725-7

Governer no. : 0 421 813 803

Cust. part No. : 1333121

Customer—spec. information Customer : SCANIA Motor : DSC11 21

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 220.0

Tolerance cm3/1000 strokes : +- 1.0	t
_	CONTROL LEVER
Check tolerance - cm3/1000S. : +- 4.0 -	t control lever position degree : 112.0
Spreed -	tolerance degree : +- 4.0
cm3/1000 strokes : 8.0 -	control lever position degree : 60.0
Check tolerance cm3/1000S. : 12.0	tolerance degree : +- 4.0
Rated speed rpm : 250	RATED SPEED
	rack travel mm : 11.70
Rack travel in mm: 4.70	Rated speed rpm : 995
Tolerance mm : + 0.30	Tolerance 1/min : +- 5
Del. quantity	
cm3/1000 strokes : 16.0	rack travel mm : 4.00
Tolerance -	Rated speed rpm : 1120
cm3/1000 strokes : +- 3.0	Tolerance 1/min : +- 15
Check tolerance - cm3/1000s. : +- 6.0 -	rack travel mm : 0.50
	Tolerance mm : +- 0.50
Spreed	
Tolerance - cm3/1000 strokes : 4.0	Rated speed rpm : 1250
Check tolerance	
cm3/1000s. : 8.0	
. 5.0	LOW IDLE
4-1	
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	control lever
7	position degree : 10.0
7	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION -	- control lever
GOIDE SEEEVE POSITION	position degree : 62.0
Rated speed rpm : 1150	tolerance degree : + 4.0
1	<u>-</u>
Rack travel in mm: 9.50 - Tolerance mm: + 2.50 -	Testing:
-	- Rated speed rpm : 250
	rack travel mm : 4.70
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 700 Aneroid pressure	Rated speed rpm : 150
hPa :	- CRT mm min. :> 6.00
cm3/1000 strokes : 220.0	Rated speed rpm : 275
Tolerance + 1.0	
Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 4.0	_
Spreed	- Rated speed rpm : 950
Tolerance +	- rack travel mm : 12.75
cm3/1000 strokes : 8.0	- Tolerance mm : +- 0.05
Check tolerance +	•
cm3/1000s. : 12.0	•
+	•

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.75
Tolerance mm : + 0.05

#### **MEASUREMENT**

Pressure hPa : Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : +- 0.20

Rated speed rpm : 500

Pressure hPa : 270
rack travel mm : 11.00
Tolerance mm : + 0.15

Pressure hPa : 440 rack travel mm : 12.05 Tolerance mm : + 0.05

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 950

Del. quantity

cm3/1000 strokes : 209.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 153.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

## BREAKAWAY

Rack travel in mm: 11.70

Rated speed rpm : 995
Tolerance 1/min : +- 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 165.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

# LOW IDLE

Rated speed rpm 250 rack travel mm 4.70 Tolerance mm : + - 0.30Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance : +cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.12.95 Edition Test oil : ISO 4113

Combination No. : 0 402 648 793

Injection pump

Pump designation : PE8P12OA32OLS7873 EP type number : 0 412 628 880

Governor

Governer design. : RQ300/1050PA1268 Governer no. : 0 421 801 802

Cust. part No. : 04223118KY0165-17

Customer-spec. information

: KHD Customer

: BF8M1015/C Motor

: 400.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press, bar 1.5

: +- 0.1 Tolerance bar

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

: 1 680 750 075 Test lines

Outside diameter : 8.0 x inside diameter: 3.0 1000 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

4.05 Prestroke mm : +- 0.05 Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 1-8-7-2-6 Firing order

: - 5- 4- 3

: 0-45-90-135-180 Phasing

: -225-270-315 : +- 0.30

Tolerance

Check

tolerance °NW : + 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance "NW : + 0.75

1 Barrel no.

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 340.0

		+ Rated speed rpm : 1290
Tolerance		+ guide sleeve
cm3/1000 strokes	: + 1.0	† travel mm : 11.50
		+ Tolerance mm : + 0.50
Check tolerance		†
cm3/1000s.	: +- 4.0	CUITAE OF FEITE PROTECTION
Concod	**************************************	+ GUIDE SLEEVE POSITION
Spreed Tolerance		Poted speed ppp . 11/0
cm3/1000 strokes	: 5.0	Rated speed rpm : 1149
CIIDY TODO SELORES	. 5.0	T Rack travel in mm : 13.00
Check tolerance		+ Tolerance mm : + 1.30
cm3/1000s.	: 9.0	Total arise limit
11107 100001	, , , , ,	
Rated speed rpm	: 300	+ FULL LOAD DELIVERY AT FULL LOAD STOP
•		+
Rack travel in mm	: 6.00	+ Rated speed rpm : 1050
Tolerance mm	: +- 0.10	+ Aneroid pressure
Tolerance		+ hPa : 1600
cm3/1000 strokes	: +- 3.0	+ Del. quantity
Check tolerance		+ cm3/1000 strokes : 340.0
cm3/1000S.	: +- 6.0 -	+ Tolerance
Spreed		+ cm3/1000 strokes : +- 1.0
Tolerance		+ Check tolerance
cm3/1000 strokes	: 8.0	+ cm3/1000s. : +- 4.0
Check tolerance	40.0	Spreed
cm3/1000s.	: 12.0	+ Tolerance
		+ cm3/1000 strokes : 5.0
(B) SETTING OF IN	IECTION DUMD	+ Check tolerance + cm3/1000s. : 9.0
WITH GOVERNOR	DECITOR POMP	T (1137 10005. : 9.0
WITH GOVERNOR		$oxed{f I}$
GUIDE SLEEVE TRAVI	EL	+ CONTROL LEVER
		+
Rated speed rpm	: 300	+ control lever
guide sleeve		+ position degree : 97.0
travel mm	: 1.66	+ tolerance degree : +- 4.0
Tolerance mm	: <b>←</b> 0.20	†
	4454	+ RATED SPEED
Rated speed rpm	: 1106	17.00
guide sleeve	. 4.57	+ rack travel mm : 13.00
travel mm Tolerance mm	: 6.53 : ← 0.15	+ Rated speed rpm : 1100 + Tolerance 1/min : +- 10
roterance nm	: - 0.15	+ Tolerance 1/min : +- 10
Rated speed rpm	: 1050	rack travel mm : 4.00
guide sleeve	. 1030	+ Rated speed rpm : 1200
travel mm	: 6.00	+ Tolerance 1/min : +- 15
Tolerance mm	: + 0.10	+
		∔ rack travel mm : 0.50
Rated speed rpm	: 458	+ Tolerance mm : +- 0.50
guide sleeve		+ Rated speed rpm : 1280
travel mm	: 4.21	+
Tolerance mm	: +- 0.10	+
		+
Rated speed rpm		1
	: 580	+ LOW IDLE
guide sleeve		+ LOW IDLE
travel mm	: 6.00	‡
		control lever
travel mm	: 6.00	‡

tolerance degree Testing:	: +- 4.0	+ Check + speed 1/min : < 240
Rated speed rpm	: 300	FUEL DELIVERY CHARACTERISTICS
rack travel mm Tolerance mm	: 6.00 : + 0.10	Aneroid pressure
rack travel mm Rated speed rpm Tolerance 1/min	: 449	Rated speed rpm : 400  Del. quantity  cm3/1000 strokes : 250.0
Rated speed rpm		Tolerance + cm3/1000 strokes : +- 1.0
CRT mm min.	: > 7.26	+ Check tolerance + cm3/1000S. : + 4.0
TORQUE CONTROL		BREAKAWAY
Rated speed rpm rack travel mm Tolerance mm	: 14.00	Rack travel in mm: 13.00 Rated speed rpm: 1100 Tolerance 1/min: + 10
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		STARTING FUEL DELIVERY Rated speed rpm : 100
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1600 : 14.00	+ Rated speed rpm : 100 + rack travel mm : 9.45 + Tolerance mm : + 0.75 + Tolerance + cm3/1000 strokes : + 20.0 + Check tolerance
MEASUREMENT		cm3/1000s. : +- 24.0
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		
Rated speed rpm	: 400	LOW IDLE
Pressure hPa rack travel mm Tolerance mm		Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : + 0.10 Tolerance
Pressure hPa rack travel mm Tolerance mm	: 1100 : 13.00 : + 0.05	cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance
START CUT-OUT		cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm Rated speed rpm		cm3/1000s. : 12.0
Check speed 1/min	: > 80	‡

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.12.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 736 888

Injection pump

Pump designation : PES6P120A120RS7390 EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1237K

Governer no. : 0 421 815 475

Cust. part No. : 3282740

Customer-spec. information Customer : CUMMINS Motor : 6CTAA Power KW : 162.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance *C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h Tolerance l/h: +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

3.30 Prestroke mm : + 0.05Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 : +- 0.50

Tolerance mm

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300 : **←** 0.30

Tolerance

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.00

: + - 0.50Tolerance

Check

tolerance °NW : + 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.60

Tolerance mm : + 0.05	L
-	Rated speed rpm : 1380
Del. quantity -	guide sleeve
cm3/1000 strokes : 164.0 -	travel mm : 13.50 Tolerance mm : +- 0.50
Tolerance	Total and the same
cm3/1000 strokes : + 1.0	OUTDE OF THE PROTECTION
Check tolerance	GUIDE SLEEVE POSITION
cm3/1000s. : + 4.0	Rated speed rpm : 1200
Spreed - Tolerance -	Rack travel in mm : 11.60 Tolerance mm : + 1.50
cm3/1000 strokes : 5.0	- Total de name - 1.50
Check tolerance - cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	Rated speed rpm : 1100
Rated speed rpm : 350 -	Aneroid pressure
Dord Americal Survey ( 00	hPa : 1500
Rack travel in mm : 4.80 - Tolerance mm : +- 0.30 -	Del. quantity cm3/1000 strokes : 164.0
Del. quantity	- Tolerance
cm3/1000 strokes : 18.0	cm3/1000 strokes : + 1.0
Tolerance - 3.0 - 3.0	- Check tolerance - cm3/1000s. : +- 4.0
Check tolerance	- Spreed
cm3/1000s. : +- 5.0 -	Tolerance
Spreed - Tolerance -	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 7.0	- cm3/1000s. : 9.0
Check tolerance	
cm3/1000s. : 11.0	
]	- CONTROL LEVER
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	control lever
	- position degree : 69.0 - tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	
Patent award non-	- control lever
Rated speed rpm : 350	- position degree : 123.0 - tolerance degree : +- 4.0
travel mm : 1.93	-
Tolerance mm : + 0.20	- RATED SPEED
Rated speed rpm : 1159	- - rack travel mm : 11.60
guide sleeve	- Rated speed rpm : 1145
travel mm : 10.27	- Tolerance 1/min : +- 5
Tolerance mm : $\leftarrow$ 0.15	- - rack travel mm : 4.00
Rated speed rpm : 710	- Rated speed rpm : 1230
guide sleeve	Tolerance 1/min : +- 15
travel mm : 5.79 + Tolerance mm : + 0.25 +	- - rack travel mm : 0.50
Tolerance mm : + 0.25	- Tolerance mm : +- 0.50
Rated speed rpm : 420	- Rated speed rpm : 1350
guide sleeve	-
travel mm : 4.28 + Tolerance mm : +- 0.25 +	•
reservation than a second the second terms of	

<del></del>			rack travel mm Tolerance mm	: 10.25 : +- 0.20
LOW IDLE		1	Rated speed rpm	
		Ţ	Nateu speeu i piii	. 1100
control lever position degree tolerance degree		+	Pressure hPa rack travel mm Tolerance mm	
control lever position degree tolerance degree		† † †	Pressure hPa rack travel mm Tolerance mm	: 330 : 12.10 : + 0.05
Testing:		‡	START CUT-OUT	······································
Rated speed rpm rack travel mm Tolerance mm	: 4.80	+	Rated speed rpm Rated speed rpm	
Rated speed rpm	: 250	1	Check speed 1/min	: > 80
CRT mm min.	: > 7.70	1	Check speed 1/min	: < 300
Rated speed rpm	: 350	1		
TORQUE CONTROL	· · · · · · · · · · · · · · · · · · ·		FUEL DELIVERY CHA	RACTERISTICS
101/405 001111/05		1	Aneroid pressure	
Rated speed rpm rack travel mm	; 12.60	‡	hPa Rated speed rpm	: 1500 : 750
Tolerance mm		‡	Del. quantity cm3/1000 strokes	: 155.0
Rated speed rpm rack travel mm Tolerance mm	: 12.30	‡	Tolerance cm3/1000 strokes Check tolerance	: <del></del> 3.0
Rated speed rpm		1	cm3/1000S. Spreed	: +- 6.0
rack travel mm		4	Tolerance	
Tolerance mm		‡	cm3/1000 strokes Check tolerance	
Rated speed rpm rack travel mm		‡	cm3/1000s.	: 16.0
Tolerance mm	: +- 0.15	<u> </u>	Aneroid pressure	• _
		<del></del>	Rated speed rpm	500
ANEROID/ALTITUDE COMPENSATOR TEST		Ī	Del. quantity cm3/1000 strokes Tolerance	: 107.0
SETTING		1	cm3/1000 strokes Check tolerance	: +- 2.0
	: 1100	1	cm3/1000s.	: +- 4.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1500 : 1500 : 12.60 : +- 0.05	Ī	BREAKAWAY	
MEASUREMENT		+	Rack travel in mm	
Pressure hPa Rated speed rpm	: - : 1100	† † †	Rated speed rpm Tolerance 1/min	

# STARTING FUEL DELIVERY

Rated speed rpm : 180
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 255.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 24.0

# LOW IDLE

350 Rated speed rpm 4.80 rack travel mm Tolerance mm : + 0.30Del. quantity 18.0 cm3/1000 strokes : Tolerance 3.0 cm3/1000 strokes Check tolerance 5.0 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s.11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.12.95 Edition Test oil : ISO 4113

Combination No. : 0 402 736 889

Injection pump

Pump designation : PES6P12OA12ORS7390

EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1244K

Governer no. : 0 421 815 477

Cust. part No. : 3282739

Customer-spec. information Customer : CUMMINS Motor : 6CTAA

Power KW : 179.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 90 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance  $^{\circ}NW$  : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.00 Tolerance : + 0.50

Check

tolerance *NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.00

Tolerance mm : +-	0.05	
roterance inti	1.05	Rated speed rpm : 1380
Del. quantity	+	guide sleeve
	173.0	travel mm : 13.50
Talasasa	<del></del>	Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : +-	1.0	
CHOT TOOL STICKES	1.0	GUIDE SLEEVE POSITION
Check tolerance	+	
cm3/1000s. : +-	4.0	Rated speed rpm : 1195
Spreed	I	Rack travel in mm : 12.00
Tolerance	1	Tolerance mm : + 1.30
cm3/1000 strokes :	5.0	
Charl Ashanan	<del></del> †	FULL LOAD DELTUEDY AT FULL LOAD OTOD
Check tolerance cm3/1000s. :	9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
(110) 10000.	7.0	Rated speed rpm : 1100
Rated speed rpm : 3	350	Aneroid pressure
<b>.</b>	+	hPa : 1500
Rack travel in mm : Tolerance mm : +-	4.60	Del. quantity cm3/1000 strokes : 173.0
Del. quantity	1.30	Tolerance
	18.0	cm3/1000 strokes : + 1.0
Tolerance	+	Check tolerance
cm3/1000 strokes : +	3.0	cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : +-	5.0	Spreed Tolerance
Spreed	1	cm3/1000 strokes : 5.0
Tolerance	+	Check tolerance
cm3/1000 strokes :	7.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s. :	11.0 I	
(1137 10003:	1	
	+	CONTROL LEVER
(B) SETTING OF INJECTION	I PUMP +	. Aug. I. Danie
WITH GOVERNOR	1	control lever position degree : 68.0
	<u> </u>	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	+	-
	+	control lever
	50 †	position degree : 122.0 tolerance degree : +- 4.0
guide sleeve travel mm :	1.93	total aliae degree . 4 - 4.0
Tolerance mm : +		RATED SPEED
But I am at a second	+	
Rated speed rpm : 11. guide sleeve	⁵⁹ 1	rack travel mm : 12.00 Rated speed rpm : 1145
	0.27	Tolerance 1/min : +- 5
Tolerance mm : +-		
	<u>.</u> +	rack travel mm : 4.00
	10 +	Rated speed rpm : 1230 Tolerance 1/min : + 15
guide sleeve travel mm	5.79	roterance mini ; To 15
Tolerance mm : +- (		rack travel mm : 0.50
	+	Tolerance mm : +- 0.50
	20 +	Rated speed rpm : 1350
guide sleeve travel mm :	4.28	
	0.25	
	•	

Pressure hPa			1		
Tolerance mm : + 0.20  control lever position degree : 74.0					
control lever position degree : 74.0	LOW IDLE		†		
Control lever   position degree   20.0     START CUT-OUT     ART CUT-OUT   START			İ	loterance mm	: +- U.2U
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Control lever   position degree   20.0     START CUT-OUT     ART CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START		: 74.0	1	rack travel mm	: 12.60
Control lever   position degree   20.0     START CUT-OUT     ART CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START CUT-OUT   START	tolerance degree	: <b>←</b> 4.0	+	Tolerance mm	: +- 0.05
position degree         : 20.0           tolerance degree         : 4.0           Testing:         Rated speed rpm         : > 100           Rated speed rpm         : < 290	n 1 E		+		
Testing:  Rated speed rpm : > 100 Rated speed rpm : < 290  Rated speed rpm : < 290  Rated speed rpm : < 290  Rated speed rpm : < 290  Rated speed rpm : < 290  Check speed 1/min : > 80 Check speed 1/min : < 300  Rated speed rpm : < 300  Rated speed rpm : < 300  Rated speed rpm : > 300  Rated speed rpm : > 300  Rated speed rpm : < 300  Rated speed rpm : < 300  Rated speed rpm : < 300  Rated speed rpm : < 700  Rated speed rpm : 700  Publivery Characteristics  Aneroid pressure hpa speed rpm : 700  Publivery Characteristics  Aneroid pressure hpa : 1500 Rated speed rpm : 700  Publivery Characteristics  Aneroid pressure hpa : 1500 Rated speed rpm : 700  Check tolerance cm3/1000 strokes : 171.0  Tolerance mm : + 0.05  Rated speed rpm : 700  Rated speed rpm : 30.0  Check tolerance cm3/1000s trokes : 8.0  Check tolerance cm3/1000s trokes : 8.0  Check tolerance cm3/1000s trokes : 12.0  Rated speed rpm : 500  Rated sp		• 20 0	†	STADE CHE OUT	
Rated speed rpm : > 100   Rated speed rpm : < 290	tolerance degree	: + 4.0	I	START COT-OUT	
Rated speed rpm : 350 rack travel mm : 4.60 rolerance mm : + 0.10  Rated speed rpm : 250  CRI mm min. : > 7.50  Rated speed rpm : 350  CRI may min. : > 7.50  Rated speed rpm : 350  Rated speed rpm : 1100  Rated speed rpm : 1100  Rated speed rpm : 13.00  TORQUE CONTROL  Rated speed rpm : 13.00  Rated speed rpm : 13.00  Rated speed rpm : 13.00  Rated speed rpm : 700  Pack travel mm : 13.15  Tolerance mm : + 0.10  Rated speed rpm : 500  rack travel mm : 13.15  Tolerance mm : + 0.15  ANEROID/ALTITUDE  COMPENSATOR TEST  Rated speed rpm : 700  Pressure hPa : 1500  Rated speed rpm : 700  Pressure hPa : 1500  Rated speed rpm : 700  Rated speed rpm : 500  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 1500  Rated speed rpm : 1145  Rated speed rpm : 1145  Tolerance 1/min : + 5   STARTING FUEL DELIVERY	cotor arros asgres	• • • • • • • • • • • • • • • • • • • •	1	Rated speed rom	: > 100
Rated speed rpm : 350 rack travel mm : 4.60 rolerance mm : + 0.10  Rated speed rpm : 250  CRI mm min. : > 7.50  Rated speed rpm : 350  CRI may min. : > 7.50  Rated speed rpm : 350  Rated speed rpm : 350  Rated speed rpm : 1100  Rated speed rpm : 1100  Rated speed rpm : 13.00  Torque control  Rated speed rpm : 13.00  Tolerance mm : + 0.05  Rated speed rpm : 700  rack travel mm : 13.15  Tolerance mm : + 0.10  Rated speed rpm : 500  rack travel mm : 13.15  Tolerance mm : + 0.15  Aneroid pressure hPa : - 6.0  Spreed  rady1000s strokes : + 3.0  Check tolerance cm3/1000 strokes : 171.0  Tolerance mm : + 0.10  Check tolerance cm3/1000 strokes : + 3.0  Check tolerance cm3/1000 strokes : 12.0  Aneroid pressure hPa : - Rated speed rpm : 500  Pake travel mm : 12.25  Tolerance mm : + 0.15  Aneroid pressure hPa : - Rated speed rpm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 500  Pake travel mm : 13.20  Rated speed rpm : 500  Pressure hPa : - Rated speed rpm : 10.05  Rated speed rpm : 1145  Tolerance mm : + 0.05  Rated speed rpm : 1145  Tolerance mm : 12.00  Rated speed rpm : 1145  Tolerance mm : 10.20  Tolerance mm : 10.20  Tolerance mm : + 0.20  STARTING FUEL DELIVERY	Testing:		+	Rated speed rpm	: < 290
rack travel mm : 4.60			+		
Tolerance mm	Rated speed rpm	: 350	†		5 00
Rated speed rpm : 250  CRT mm min. : > 7.50  Rated speed rpm : 350  TORQUE CONTROL  Rated speed rpm : 1100  Rated speed rpm : 13.00  Tolerance mm : + 0.05  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 13.00  Tolerance mm : + 0.05  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 13.15  Tolerance mm : + 0.10  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 12.25  Tolerance mm : + 0.15  Aneroid pressure  hPa : -  Rated speed rpm : 500  ANEROID/ALTITUDE  COMPENSATOR TEST  ANEROID/ALTITUDE  COMPENSATOR TEST  Rated speed rpm : 700  Pressure hPa : 1500  Rated speed rpm : 1500  Rated speed rpm : 1500  Rated speed rpm : 13.20  Tolerance mm : + 0.05  MEASUREMENT  Rack travel in mm : 12.00  Rated speed rpm : 700  Rated speed rpm : 700  Pressure hPa : -  Rack travel in mm : 12.00  Rated speed rpm : 700  Rated speed rpm : 1145  Tolerance 1/min : + 5  STARTING FUEL DELIVERY	rack travel mm	; 4.0U ; ± 0.10	†		: > 80
Rated speed rpm : 250  CRT mm min. : > 7.50	Interdite (IRI)		I		• < 300
Rated speed rpm : 350	Rated speed rpm	: 250	1	Speca truitt	
Rated speed rpm : 350  TORQUE CONTROL  Rated speed rpm : 700  Pel. quantity  cm3/1000 strokes : 171.0  Tolerance mm : + 0.05  Rated speed rpm : 700  Tolerance mm : + 0.05  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 700  Rated speed rpm : 500  Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 109.0  Tolerance  cm3/1000 strokes : + 2.0  Check tolerance  cm3/1000 strokes : + 2.0  Check tolerance  cm3/1000s. : + 4.0   BREAKAWAY  BREAKAWAY  Tolerance mm : + 0.05   MEASUREMENT  Pressure hPa : -  Rated speed rpm : 700  Rated speed rpm : 1145  Tolerance 1/min : + 5  STARTING FUEL DELIVERY	•		+	<del></del>	<del></del>
NPa	CRT mm min.	: > 7.50	+	FUEL DELIVERY CHA	ARACTERISTICS
NPa	Detect annual	. 750	†	Amanadal mu	
Rated speed rpm : 700	kated speed rpm	: 220	<u>†</u>		• 1500
Del. quantity			I		
Rated speed rpm : 1100 rack travel mm : 13.00 Tolerance mm : + 0.05  Rated speed rpm : 700 rack travel mm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 500 rack travel mm : 12.25 Tolerance mm : + 0.15  Aneroid pressure hPa : - 700 Rated speed rpm : 500 SETTING  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 700 SETTING  Rated speed rpm : 700 Pressure hPa : 1500 Rated speed rpm : 14.0  Rated speed rpm : 700 Rated speed rpm : 14.5 Tolerance rpm : 14.5  Rack travel in mm : 12.00 Rated speed rpm : 700 Rated speed rpm : 700 Rated speed rpm : 1145 Tolerance 1/min : + 5  Tolerance 1/min : + 5  Tolerance 1/min : + 5  Tolerance 1/min : + 5  Tolerance 1/min : + 5  Tolerance 1/min : + 5  Tolerance 1/min : + 5	TORQUE CONTROL		1		
rack travel mm : 13.00 Tolerance mm : + 0.05  Rated speed rpm : 700 Rated speed rpm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 700 Rated speed rpm : 500 Rated speed rpm : 500 Rated speed rpm : 500 Rated speed rpm : 12.25 Tolerance mm : + 0.15  Aneroid pressure Pa : - Rated speed rpm : 500 Pel. quantity Com3/1000 strokes : 109.0 Rated speed rpm : 500 Pel. quantity Com3/1000 strokes : 109.0 Tolerance Cm3/1000 strokes : 109.0 Rated speed rpm : 500 Pel. quantity Cm3/1000 strokes : 109.0 Rated speed rpm : 700 Rated speed rpm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Rack travel in mm : 12.00 Rated speed rpm : 700 Rated speed rpm : 700 Rated speed rpm : 1145 Tolerance 1/min : + 5  STARTING FUEL DELIVERY			+	cm3/1000 strokes	: 171.0
Tolerance mm : + 0.05  Rated speed rpm : 700 rack travel mm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 500 Rated speed rpm : 500 rack travel mm : 12.25 Tolerance mm : + 0.15  Aneroid pressure hPa : - Rated speed rpm : 500 Pel. quantity cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s.  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : Rated speed rpm : 700 rack travel mm : 10.20 Tolerance mm : + 0.20  STARTING FUEL DELIVERY	Rated speed rpm	: 1100	+		
Rated speed rpm : 700 rack travel mm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 500 rack travel mm : 12.25 Tolerance mm : + 0.15  Aneroid pressure hPa : 500 Rated speed rpm : 700 Pressure hPa : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : 700 Rated speed rpm : 700 Rated speed rpm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : - Rack travel in mm : 12.00 Rated speed rpm : 700 Rack travel mm : 10.20 Tolerance 10.20  STARTING FUEL DELIVERY	rack travel mm		+		: <b>←</b> 3.0
Rated speed rpm : 700 rack travel mm : 13.15 Tolerance mm : + 0.10  Rated speed rpm : 500 rack travel mm : 12.25 Tolerance mm : + 0.15  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : 4.0  SETTING  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Rack travel in mm : 12.00 Rated speed rpm : 700 Rated speed rpm : 1145 Tolerance 1/min : + 5  Rack travel mm : 10.20 Tolerance mm : + 0.20  STARTING FUEL DELIVERY	Tolerance mm	: +- 0.05	†		0
Tolerance mm : + 0.10	Pated cheed rom	• 700	Ī		: +- 0.0
Tolerance mm : + 0.10	rack travel mm	: 13.15	1		
Rated speed rpm : 500 rack travel mm : 12.25 Tolerance mm : + 0.15  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000strokes : + 2.0  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Rack travel in mm : 12.00 Rated speed rpm : 700 Rated speed rpm : 700 rack travel mm : 10.20 Tolerance mm : + 0.20  STARTING FUEL DELIVERY	Tolerance mm	: +- 0.10	<del> </del>		: 8.0
Tack travel mm			+		
Tolerance mm : +- 0.15  Aneroid pressure hPa : Rated speed rpm : 500  Del. quantity cm3/1000 strokes : 109.0  Tolerance cm3/1000 strokes : + 2.0  Check tolerance cm3/1000s. : + 4.0  Rated speed rpm : 700  Pressure hPa : 1500  rack travel mm : 13.20  Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : Rack travel in mm : 12.00  Rated speed rpm : 7145  Tolerance 1/min : + 5  Rated speed rpm : 700  rack travel mm : 10.20  Tolerance mm : + 0.20  STARTING FUEL DELIVERY			+	cm3/1000s.	: 12.0
hPa			†	Anonoid massaces	
Rated speed rpm : 500	roterance mm	0.15	1		•
ANEROID/ALTITUDE COMPENSATOR TEST  Del. quantity cm3/1000 strokes : 109.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : - Rated speed rpm : 700 rack travel mm : 10.20 Tolerance mm : + 0.20  STARTING FUEL DELIVERY		<del></del>	I		500
COMPENSATOR TEST    cm3/1000 strokes : 109.0     Tolerance   cm3/1000 strokes : + 2.0     Check tolerance   cm3/1000s. : + 4.0     Rated speed rpm : 700     Pressure hPa : 1500   BREAKAWAY     Tolerance mm : + 0.05     MEASUREMENT   Rack travel in mm : 12.00     Rated speed rpm : 1145     Tolerance 1/min : + 5     Rated speed rpm : 700     rack travel mm : 10.20     Tolerance mm : + 0.20     Tolerance mm : + 0.20     STARTING FUEL DELIVERY	ANEROID/ALTITUDE		1		
SETTING  Cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  Rated speed rpm : 700 Pressure hPa : 1500 rack travel mm : 13.20 Tolerance mm : + 0.05  Rack travel in mm : 12.00 Rated speed rpm : 1145 Tolerance 1/min : + 5  Rated speed rpm : 700 rack travel mm : 10.20 Tolerance mm : + 0.20  STARTING FUEL DELIVERY			+	cm3/1000 strokes	: 109.0
Check tolerance   cm3/1000s. : + 4.0			+		
Rated speed rpm : 700  Pressure hPa : 1500  rack travel mm : 13.20  MEASUREMENT  Pressure hPa : -  Rated speed rpm : 700  Rated speed rpm : 700  rack travel mm : 10.20  Tolerance mm : + 0.20  STARTING FUEL DELIVERY	CETTINO		†		: +- 2.0
Rated speed rpm : 700 Pressure hPa : 1500  rack travel mm : 13.20  MEASUREMENT  Pressure hPa : - Rated speed rpm : 700  Rated speed rpm : 700 rack travel mm : 10.20  Tolerance mm : + 0.20  STARTING FUEL DELIVERY	9E11TMP		1		· +- / / D
Pressure hPa       : 1500         rack travel mm       : 13.20         Tolerance mm       : + 0.05         MEASUREMENT       Rack travel in mm       : 12.00         Pressure hPa       : -       Rated speed rpm       : 1145         Rated speed rpm       : 700       Tolerance 1/min       : + 5         rack travel mm       : 10.20       Tolerance mm       : + 5         Tolerance mm       : + 0.20       STARTING FUEL DELIVERY	Rated speed rom	: 700	I	011127 1 0000 s	• ' 4•0
rack travel mm       : 13.20       + BREAKAWAY         Tolerance mm       : + 0.05       + Rack travel in mm       : 12.00         MEASUREMENT       + Rack travel in mm       : 12.00         Pressure hPa       : - Tolerance 1/min       : + 5         Rated speed rpm       : 700       - Tolerance 1/min       : + 5         rack travel mm       : 10.20       - Tolerance mm       : + 5         Tolerance mm       : + 0.20       - STARTING FUEL DELIVERY			1		
MEASUREMENT  Pressure hPa : - Rated speed rpm : 1145  Rated speed rpm : 700  rack travel mm : 10.20  Tolerance mm : + 0.20  Rack travel in mm : 12.00  Rated speed rpm : 1145  Tolerance 1/min : + 5  STARTING FUEL DELIVERY	rack travel mm	: 13.20	+	BREAKAWAY	
Rated speed rpm : 1145	Tolerance mm	: <b>←</b> 0.05	+		
Rated speed rpm : 1145	MEACHDEMENT		†	Dook travel	. 42 00
Pressure hPa : -	MEASUKEMENI		<u> </u>		
Rated speed rpm : 700 rack travel mm : 10.20 Tolerance mm : + 0.20	Pressure hPa	: -	I		
rack travel mm : 10.20 Tolerance mm : + 0.20		700	1	. 3 COT GITTO 17 WITH	•
Tolerance mm : + 0.20 + STARTING FUEL DELIVERY	rack travel mm	: 10.20	+		
	Tolerance mm		+		
kated speed rpm : /UU +	<b>6.4</b>	. 700	+	STARTING FUEL DEL	IVERY
	Rated speed rpm	: /00	+		

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Rated speed rpm rack travel mm Tolerance mm	::		100 20.50 0.50
Del. quantity cm3/1000 strokes Tolerance	:		255.0
cm3/1000 strokes Check tolerance	:	+-	20.0
cm3/1000s.	:	+-	24.0

# LOW IDLE

Rated speed rpm	:	350
rack travel mm	:	4.60
Tolerance mm	; +	- 0.30
Del. quantity		
cm3/1000 strokes	:	18.0
Tolerance		
cm3/1000 strokes	: +	- 3.0
Check tolerance		
cm3/1000s.	; +	- 5.0
Spreed		
Tolerance		
cm3/1000 strokes	:	7.0
Check tolerance		
cm3/1000s.	:	11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.12.95 Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump

Pump designation : PES6P120A120RS7400

EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1100PA1244

: -1K

: 0 421 815 488 Governer no.

Cust. part No. : 3282610

Customer-spec. information Customer : CUMMINS Motor : 6CTAA Power KW : 221.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Tolerance mm : +-3.30 : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.00 Tolerance :  $\leftarrow$  0.50

Check

tolerance *NW : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.60

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes :	209.0	guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
cm3/1000 strokes : +	- 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +	- 4.0	Rated speed rpm : 1220
Spreed Tolerance cm3/1000 strokes :	5.0	Rack travel in mm : 13.60 Tolerance mm : + 1.30
Check tolerance cm3/1000s. :	9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm :	350	Rated speed rpm : 1100 Aneroid pressure hPa : 1500
Rack travel in mm : Tolerance mm : + Del. quantity	- 0.30	Del. quantity cm3/1000 strokes : 209.0 Tolerance
cm3/1000 strokes : Tolerance cm3/1000 strokes : +	+	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : +	+	Spreed Tolerance
Spreed Tolerance cm3/1000 strokes :	7.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. :	11.0	
(B) SETTING OF INJECTI WITH GOVERNOR	ION PUMP	CONTROL LEVER  control lever position degree : 66.0
GUIDE SLEEVE TRAVEL	†	tolerance degree : + 4.0 control lever
Rated speed rpm : guide sleeve travel mm :		position degree : 120.0 tolerance degree : +- 4.0
Tolerance mm : +	+	RATED SPEED
guide sleeve travel mm :	10.28	rack travel mm : 13.60 Rated speed rpm : 1145 Tolerance 1/min : + 5
Tolerance mm : +- Rated speed rpm :		rack travel mm : 4.00 Rated speed rpm : 1245
guide sleeve travel mm : Tolerance mm : +-	5.80	Tolerance 1/min : + 15  rack travel mm : 0.50
Rated speed rpm :	+	Tolerance mm : +- 0.50 Rated speed rpm : 1350
guide sleeve travel mm : Tolerance mm : +-	4.33 - 0.25	
		LOW IDLE

		1
control lever position degree tolerance degree		Pressure hPa : 880 rack travel mm : 13.20 Tolerance mm : + 0.20
control lever position degree tolerance degree		Pressure hPa : 240 rack travel mm : 11.20 Tolerance mm : +- 0.05
Testing:		
Rated speed rpm rack travel mm Tolerance mm	: 4.80	+ START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : < 280
Rated speed rpm	: 250	Check
CRT mm min.	: > 8.10	speed 1/min :> 80 + Check
Rated speed rpm	: 350	speed 1/min : < 300
		FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		+
		+ Aneroid pressure
Rated speed rpm		+ hPa : 1500
rack travel mm		+ Rated speed rpm : 750
Tolerance mm	: +- 0.05	+ Del. quantity
	750	+ cm3/1000 strokes : 198.0
Rated speed rpm		+ Tolerance
rack travel mm		+ cm3/1000 strokes : +- 3.0
Tolerance mm	: <b>←</b> 0.10	+ Check tolerance
	000	+ cm3/1000s. : +- 6.0
Rated speed rpm	: 960	+ Spreed
rack travel mm		† Tolerance
Tolerance mm	: ← 0.15	+ cm3/1000 strokes : 8.0
<b>D. A. J 1</b>		+ Check tolerance
Rated speed rpm	: 600 : 13.95	+ cm3/1000s. : 12.0
rack travel mm		<b>A</b>
Tolerance mm	: <b>←</b> 0.15	+ Aneroid pressure
		+ hPa : - Rated speed rpm : 500
ANICOATO /AL TITUDE		Rated speed rpm : 500 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		+ cm3/1000 strokes : 111.0
COMPENSATOR TEST		Tolerance
		- cm3/1000 strokes : +- 2.0
SETTING		Check tolerance
OFLITING		+ cm3/1000s. : +- 4.0
Rated speed rpm	: 1100	1
Pressure hPa	1500	
rack travel mm	: 14.60	BREAKAWAY
Tolerance mm	: +- 0.05	
	. J	<del> </del>
MEASUREMENT		→ Rack travel in mm : 13.60
		+ Rated speed rpm : 1145
Pressure hPa	: -	+ Tolerance 1/min : + 5
Rated speed rpm	: 1100	+
rack travel mm		+
Tolerance mm	: ← 0.20	
		+ STARTING FUEL DELIVERY
Rated speed rpm	: 1100	+

Rated speed rpm rack travel mm Tolerance mm	: 100 : 12.00 : ← 0.50
Del. quantity cm3/1000 strokes Tolerance	: 255.0
cm3/1000 strokes	: +- 20.0
Check tolerance cm3/1000s.	: + 24.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm Del. quantity	: +-	350 4.80 0.30	
cm3/1000 strokes		25.0	
Tolerance cm3/1000 strokes	: +	3.0	
Check tolerance cm3/1000s. Spreed	: +-	5.0	
Tolerance cm3/1000 strokes	•	7.0	
Check tolerance cm3/1000s.	:	11.0	

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 18.12.95 : ISO 4113 Edition Test oil

Combination No. : 0 402 736 893

Injection pump

Pump designation : PES6P120A120RS7400

EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1100PA1244

: -2K

Governer no. : 0 421 815 489

Cust. part No. : 3282609

Customer-spec. information

Customer : CUMMINS Motor : 6CTAA

Power KW : 206.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 125 Tolerance l/h: + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50

Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery blocking

°NW after s.o.d. : 7.00

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 14.80	<pre>+ guide sleeve + travel mm : 4.70</pre>
Tolerance mm : + 0.05	+ Tolerance mm : + 0.25
Total arice man	Total lite half
Del. quantity	Rated speed rpm : 1380
cm3/1000 strokes : 211.0	guide sleeve
	† travel mm : 13.50
Tolerance	+ Tolerance mm : + 0.50
cm3/1000 strokes : +- 1.0	+
Cheal, Aslanana	CHINE CLEENE PACITION
Check tolerance cm3/1000s. : + 4.0	GUIDE SLEEVE POSITION
CIB/ (0003 +- 4.0	Rated speed rpm : 1215
Spreed	Traced speed 1pm . 1213
Tolerance	+ Rack travel in mm: 13.30
cm3/1000 strokes : 5.0	+ Tolerance mm : +- 2.00
	+
Check tolerance	
cm3/1000s. : 9.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
750	1070
Rated speed rpm : 350	+ Rated speed rpm : 1050
Rack travel in mm : 5.10	+ Aneroid pressure + hPa : 1500
Tolerance mm : +- 0.30	Del. quantity
Del. quantity	+ cm3/1000 strokes : 211.0
cm3/1000 strokes : 25.0	+ Tolerance
Tolerance	+ cm3/1000 strokes : +- 1.0
$cm3/1000$ strokes : $\leftarrow$ 3.0	† Check tolerance
Check tolerance	+  cm3/1000s. : + 4.0
cm3/1000s. : +- 5.0	+ Spreed
Spreed	+ Tolerance
Tolerance 7.0	+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 7.0	+ Check tolerance + cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 11.0	$\frac{1}{1}$ cm3/1000s. : 9.0
cm3/1000S. : 11.U	I
(B) SETTING OF INJECTION PUMP	+ CONTROL LEVER
WITH GOVERNOR	+
	+ control lever
	+ position degree : 66.0
GUIDE SLEEVE TRAVEL	tolerance degree : + 4.0
Rated speed rpm : 350	t control lever
Rated speed rpm : 350 guide sleeve	+ position degree : 122.0
travel mm : 1.93	tolerance degree : + 4.0
Tolerance mm : + 0.20	-
	+ RATED SPEED
Rated speed rpm : 1159	+
guide sleeve	+ rack travel mm : 13.80
travel mm : 10.28	+ Rated speed rpm : 1145
Tolerance mm : ← 0.15	+ Tolerance 1/min : + 5
Detect around arm at 740	+ rack travel mm : 4.00
Rated speed rpm : 710	+ rack travel mm : 4.00 + Rated speed rpm : 1245
guide sleeve travel mm : 5.79	+ Tolerance 1/min : +- 15
Tolerance mm : + 0.25	Total and Trimiti
TO SOT MITTON THE TO THE TOTAL THE T	+ rack travel mm : 0.50
Rated speed rpm : 500	+ Tolerance mm : +- 0.50
•	Rated speed rpm : 1350

		+	
		Pressure hPa	: 880
LOW IDLE		+ rack travel mm	: 13.20
		+ Tolerance mm	: +- 0.20
		+	2/0
control lever		+ Pressure hPa	: 240
osition degree		+ rack travel mm	: 11.20
lerance degree	: <del>+-</del> 4.0	+ Tolerance mm	: +- 0.05
		+	
trol lever		+	
ion degree	: 20.0	+ START CUT-OUT	
nce degree	: <del>←</del> 4.0	+	
g:		+ Rated speed rpm	
		+ Rated speed rpm	: < 280°
		+	
speed rpm	: 350	+ Check	
avel mm ce mm	: 5.10	+ speed 1/min	: > 80
mm	: +- 0.10	+ Check	
		+ speed 1/min	: < 300
d rpm	: 250	+	
	. 0.20	<b>FIGURE</b> 251	A D A OFFICE OF TO CO
in.	: > 8.20	FUEL DELIVERY CH.	ARACTERISTICS
ed rpm	: 350	Aneroid pressure	
١٠١٠	. 000	hPa	: 1500
		Rated speed rpm	
			. טכט
		+ Del. quantity	. 107.0
	4050	+ cm3/1000 strokes	: 197.0
	: 1050	+ Tolerance	
	: 14.80	+ cm3/1000 strokes	: <del>←</del> 3.0
	: +- 0.05	Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
		+ cm3/1000s.	: +- 6.0
	: 650	+ Spreed	
	: 14.20	+ Tolerance	
	: + 0.10	+ cm3/1000 strokes	: 12.0
		- Check tolerance	- <del>-</del>
om	: 900	+ cm3/1000s.	: 16.0
	: 900 : 14.70	1	
מזו	: +- 0.15	+ Aneroid pressure	
	0.15	hPa	• -
		Rated speed rpm	500
Ε	·	Del. quantity	. 500
		cm3/1000 strokes	: 111.0
TEST			. 111.0
		+ Tolerance	
		+ cm3/1000 strokes	: +- 2.0
		+ Check tolerance	
	4050	+ cm3/1000s.	: +- 4.0
mar	: 1050	†	
	: 1500	+	
	: 14.80	+ BREAKAWAY	
	: +- 0.05	+	
		T Park Americal Street	
		+ Rack travel in mm	
		+ Rated speed rpm	
	: -	† Tolerance 1/min	<b>:</b> +- 5
rpm	: 1050	†	
mm	: 10.40	+	
e mm	: <b>←</b> 0.20	+	

Rated speed rpm : 1050

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 265.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 24.0

# LOW IDLE

Rated speed rpm 350 5.10 rack travel mm 0.30 Tolerance mm Del. quantity 25.0 cm3/1000 strokes Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance 7.0 cm3/1000 strokes : Check tolerance 11.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.12.95 Test oil : ISO 4113

Combination No. : 0 402 736 894

Injection pump

Pump designation : PES6P120A120RS7400

EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1200PA1261

Governer no. : 0 421 815 495

Cust. part No. : 3282766

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 191.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 125 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.00 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

_____

Rack travel in mm: 13.95

	1
Tolerance mm : $\leftarrow$ 0.05	4500
No. 1	Rated speed rpm : 1520
Del. quantity	- guide sleeve
cm3/1000 strokes : 190.0 -	travel mm : 13.50
Talanana	Tolerance mm : + 0.50
Tolerance - cm3/1000 strokes : +- 1.0	
CMD/ (UUU Strokes : +- 1.0 -	GUIDE SLEEVE POSITION
Check tolerance	A GOIDE SPEEDE LOSTITON
cm3/1000s. : +- 4.0	Rated speed rpm : 1340
CH27 (4000)	L Nated Speed (bill : 1540
Spreed	Rack travel in mm : 12.60
Tolerance	- Tolerance mm : +- 2.00
cm3/1000 strokes : 5.0	
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	
750	- Rated speed rpm : 1150
Rated speed rpm : 350 -	- Aneroid pressure
Rack travel in mm: 5.10	- hPa : 1500
Rack travel in mm : 5.10 Tolerance mm : + 0.30	- Del. quantity - cm3/1000 strokes : 190.0
Del. quantity	- Tolerance
cm3/1000 strokes : 25.0	- cm3/1000 strokes : +- 1.0
Tolerance	- Check tolerance
cm3/1000 strokes : +- 3.0	- cm3/1000s. : +- 4.0
Check tolerance	- Spreed
cm3/1000s. : +- 5.0	- Tolerance
Spreed	- cm3/1000 strokes : 5.0
Tolerance	- Check tolerance
cm3/1000 strokes : 7.0	- cm3/1000s. : 9.0
Check tolerance	-
cm3/1000s. : 11.0	<u>-</u>
Ī	- CONTROL LEVER
(B) SETTING OF INJECTION PUMP	CONTROL LEVER
WITH GOVERNOR	- control lever
W1111 30 V2111011	position degree : 66.0
	- tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	·
+	- control lever
Rated speed rpm : 350	- position degree : 120.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 1.93 }	•
	tolerance degree : +- 4.0 - RATED SPEED
travel mm : 1.93 Tolerance mm : + 0.20	- RATED SPEED
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258	RATED SPEED rack travel mm : 12.90
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve	RATED SPEED rack travel mm : 12.90 Rated speed rpm : 1245
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14	RATED SPEED rack travel mm : 12.90
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve	RATED SPEED rack travel mm : 12.90 Rated speed rpm : 1245
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5 rack travel mm : 4.00
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve travel mm : 5.91	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15  rack travel mm : 0.50
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve travel mm : 5.91 Tolerance mm : + 0.25	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve travel mm : 5.91 Tolerance mm : + 0.25  Rated speed rpm : 450	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15  rack travel mm : 0.50
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve travel mm : 5.91 Tolerance mm : + 0.25  Rated speed rpm : 450 guide sleeve	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm : 1.93 Tolerance mm : + 0.20  Rated speed rpm : 1258 guide sleeve travel mm : 10.14 Tolerance mm : + 0.15  Rated speed rpm : 766 guide sleeve travel mm : 5.91 Tolerance mm : + 0.25  Rated speed rpm : 450	RATED SPEED  rack travel mm : 12.90 Rated speed rpm : 1245 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1360 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50

<del></del>	Pressure hPa : 880
LOW IDLE	rack travel mm : 13.20 Tolerance mm : + 0.20
control lever	Pressure hPa : 240
position degree : 74.0	rack travel mm : 11.20
tolerance degree : +- 4.0	Tolerance mm : + 0.05
control lever	
position degree : 20.0	START CUT-OUT
tolerance degree : +- 4.0	n / 1 1 2 2 400
Testing: +	Rated speed rpm : > 100 Rated speed rpm : < 280
resting.	Nated Speed (piii . 1 200
Rated speed rpm : 350	Check
rack travel mm : 5.10	speed 1/min :> 80
Tolerance $mm$ : +- 0.10 $\pm$	Check speed 1/min : < 300
Rated speed rpm : 250	Speed William
CRT mm min. :> 8.20 +	FUEL DEL TUEDY CHADACTEDICTICS
CRT mm min. :> 8.20	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 350	Aneroid pressure
+	hPa : 1500
TORQUE CONTROL	Rated speed rpm : 600 Del. quantity
TORQUE CONTROL	cm3/1000 strokes : 176.0
Rated speed rpm : 1150	Tolerance
rack travel mm : 13.95 +	cm3/1000 strokes : $+-$ 3.0
Tolerance mm : + 0.05	Check tolerance
Rated speed rpm : 600	cm3/1000s. : +- 6.0 Spreed
rack travel mm : 13.40	Tolerance
Tolerance mm : + 0.10 +	cm3/1000 strokes : 12.0
750	Check tolerance
Rated speed rpm : 750 + rack travel mm : 14.05 +	cm3/1000s. : 16.0
Tolerance mm : + 0.15	Aneroid pressure
+	hPa : -
ALIDOADA (ALIDERIA)	Rated speed rpm : 500
ANEROID/ALTITUDE + COMPENSATOR TEST +	Del. quantity cm3/1000 strokes : 111.0
COMPENSATOR TEST	Tolerance
4	cm3/1000 strokes : +- 2.0
SETTING	Check tolerance
Rated speed rpm : 1150	cm3/1000s. : +- 4.0
Rated speed rpm : 1150 + Pressure hPa : 1500 +	
rack travel mm : 13.95	BREAKAWAY
Tolerance mm : + 0.05 +	
MEASUREMENT +	Rack travel in mm : 12.90
LIEVOOVELIEIA1	Rated speed rpm : 1245
Pressure hPa : - +	Tolerance 1/min : +- 5
Rated speed rpm : 1150	
rack travel mm : 10.40 † Tolerance mm : + 0.20 †	
Tolerance mm : + 0.20	STARTING FUEL DELIVERY
Rated speed rpm : 1150	
•	

Rated speed rpm rack travel mm Tolerance mm	:	+-	100 20.50 0.50
Del. quantity cm3/1000 strokes Tolerance	:		265.0
cm3/1000 strokes Check tolerance	:	+	20.0
cm3/1000s.	:	+	24.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm Del. quantity	: +-	350 5.10 0.30	
cm3/1000 strokes	:	25.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s. Spreed	: +	5.0	
Tolerance cm3/1000 strokes	:	7.0	
Check tolerance cm3/1000s.	:	11.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.12.95 Test oil : ISO 4113

Combination No. : 0 403 276 010

Injection pump

Pump designation : PES6MW100/720RS1526

EP type number : 0 413 206 025

Governor

Governer design. : RSV350...1200MW0A355

: -3

: 0 420 085 275 Governer no.

Cust. part No. : 0260748202

Customer-spec. information Customer : MB-NFZ Motor : 0M366LA Power KW : 100.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar  $: \leftarrow 1.5$ 

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar  $: \leftarrow 1.0$ 

4.55 Prestroke mm : + 0.05 Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 20.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  : +- 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 11.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 96.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +cm3/1000s. 3.0

Spreed

Tolerance

3.5 cm3/1000 strokes :

		1		
Check tolerance cm3/1000s.	: 6.0	+	control lever position degree tolerance degree	
Rated speed rpm		‡	RATED SPEED	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: + 0.30	‡	rack travel mm Tolerance mm Rated speed rpm	: 1.00 : + 0.70 : 1400
cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 4.5	<u> </u>	rack travel mm Rated speed rpm	: 4.00 : 1315
Spreed Tolerance cm3/1000 strokes		+	rack travel mm Rated speed rpm Tolerance 1/min	
Check tolerance		Ŧ		-
cm3/1000s.	: 5.5	‡	ASSÉMBLY GOVERNOR	
(B) SETTING OF INJ	ECTION PUMP	‡	Rated speed rpm rack travel mm	
		+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: 1300 : + 4 : 4.00
GUIDE SLEEVE POSIT	TION	1	Rated speed rpm	: 1241
Rated speed rpm	: 800	Ì	rack travel mm	
Rack travel in mm Tolerance mm	: 0.65 : +- 0.35	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: 1301 : + 4 : 4.00
governor spring pre-tension click setting x	: 3.75	† † + +	Rated speed rpm rack travel mm	
	' AT FULL LOAD STOP	† † †	Rated speed rpm Tolerance 1/min rack travel mm	
Rated speed rpm Aneroid pressure hPa Del. quantity	: 1200 : 1000	<u> </u>	Rated speed rpm rack travel mm	: 1243 : 10.15
cm3/1000 strokes Tolerance	: 96.0	+	Rated speed rpm Tolerance 1/min	: 1303 : + 4
cm3/1000 strokes Check tolerance	: +- 1.0	‡	rack travel mm	: 4.00
cm3/1000s. Spreed Tolerance	: <del>←</del> 3.0	†	Rated speed rpm rack travel mm	: 1244 : 10.15
cm3/1000 strokes Check tolerance	: 3.5	‡	Rated speed rpm Tolerance 1/min	: 1304 : +- 4
cm3/1000s.	: 6.0	‡	rack travel mm	: 4.00
CONTROL 1 FUED		+	Rated speed rpm rack travel mm	: 1245 : 10.15
CONTROL LEVER		Ŧ	Rated speed rpm Tolerance 1/min	: 1305 : +- 4

rack travel mm	: 4.00	+
LOW TOLE		- FUEL DEI
LOW IDLE		† Aneroid
Testing:		+ hPa + Rated sp
Rated speed rpm	: 350	- Del. qua
rack travel mm		+ cm3/1000
Tolerance mm	: +- 0.10	+ Tolerand
rack travel mm	: 2.00	+ cm3/1000 + Check to
		- cm3/1000
Rated speed rpm Tolerance 1/min	: <del>+</del> 30	Spreed
Octob cused our	. 100	+ Tolerand
Rated speed rpm	: 100	+ cm3/1000 + Check to
CRT mm min.	; > 19.00	+ cm3/1000
		+
TORQUE CONTROL		- Check to cm3/1000 - Check to cm3/1000 - Spreed - Tolerand - cm3/1000 - Check to cm3/1000 - Aneroid - hPa - Rated sp - Del. qua - cm3/1000 - Tolerand - cm3/1000 - Check to
TORGUE CONTROL		Rated sp
Rated speed rpm	: 1200	+ Del. qua
rack travel mm Tolerance mm	: 11.15	+ cm3/1000
Tolerance mm	: +- 0.05	+ Tolerand
Pated speed rom	• 750	+ cm3/1000 + Check to
Rated speed rpm rack travel mm	: 11.15	+ cm3/1000
Tolerance mm	: +- 0.10	+
		†
ANEROID/ALTITUDE		· I
COMPENSATOR TEST		STARTING
		+
CETTAIC		+ Rated sp
SETTING		+ Del. qua + cm3/1000
Rated speed rpm	: 500	+ Tolerand
Rated speed rpm Pressure hPa	: 1000	+ cm3/1000
rack travel mm	: 11.15	+ Check to
Tolerance mm	: +- 0.10	
MEASUREMENT		Ţ
		+
Pressure hPa Rated speed rpm	500	LOW IDLE
Tolerance mm	: + 0.10	T LOW IDEC
		+ Rated sp
Rated speed rpm	: 500	+ rack tra
Pressure hPa	: 400	+ Toleranc + Del. qua
rack travel mm	1.00	cm3/1000
Tolerance mm	: + 0.10	+ Tolerand
	. 700	+ cm3/1000
Pressure hPa	: 300 : 0.50	+ Check to + cm3/1000
rack travel mm Tolerance mm	: 0.50 : +- 0.10	+ Spreed
. O CO. GITOC HAII		Toleranc
		+ cm3/1000
		+

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 750
Del. quantity cm3/1000 strokes	: 93.0
Tolerance cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes Check tolerance	: 5.5
cm3/1000s.	: 7.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 65.0 : + 1.0 : + 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	: 120.0
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s.	: +- 8.0

Rated speed rpm	:	350
rack travel mm	:	3.50
Tolerance mm	: +-	0.30
Del. quantity		
cm3/1000 strokes	:	12.0
Tolerance		
cm3/1000 strokes	: +	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	٠	3.5
CIIIO/ 1006 SCI ORCS	•	٥.5

Check tolerance cm3/1000s.	:	5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28.12.95 Edition Test oil : ISO 4113

Combination No. : 0 400 463 121

Injection pump

Pump designation : PES3A80D410/3RS1324

EP type number : 0 410 483 017

Governor

Governer design. : RSV325...900A7C602

: -4L

: 0 420 232 604 Governer no.

Cust. part No.

Customer-spec. information Customer : KHD Motor : F3L912

#### TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar Tolerance bar : + 1.5

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar :  $\leftarrow$  1.0

1.95 Prestroke mm

: +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1- 3- 2

: 0-120-240 Phasing

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm: 11.20 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 50.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance : +cm3/1000s. 2.0

Spreed Tolerance

cm3/1000 strokes :

2.3

Check tolerance

cm3/1000s. 4.0

Rated speed rpm : 325	
1	rack travel mm : 4.00
Rack travel in mm: $8.40$	Rated speed rpm : 960
Tolerance mm : + 0.10 +	Tolerance 1/min : + 15
Del. quantity	
cm3/1000 strokes : 11.0	rack travel mm : 0.85
Tolerance + 1.5 + 1.5	Tolerance mm : + 0.55 Rated speed rpm : 1100
Check tolerance	Rated speed rpm : 1100
cm3/1000s. : + 3.5	rack travel mm : 4.00
Spreed	Rated speed rpm : 975
Tolerance +	
cm3/1000 strokes : 4.0	
Check tolerance	LOUTE
cm3/1000s. : 6.0	LOW IDLE
I	
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR +	position degree : 77.0
+	tolerance degree : +- 4.0
<del>†</del>	
GUIDE SLEEVE POSITION +	Setting point w/out bumper spring
doing special continue	Rated speed rpm : 325
Rated speed rpm : 800	rack travel mm : 7.90
+	Table of dead min
Rack travel in mm: 0.50	Testing:
Tolerance mm : + 0.20 +	700
	Rated speed rpm : 325
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 8.40 Tolerance mm : +- 0.10
TOLL LOAD DELIVERY AT FOLL LOAD STOP	Totel differmine . The U. To
Rated speed rpm : 880	rack travel mm : 2.00
Aneroid pressure	Rated speed rpm : 450
hPa : - +	Tolerance 1/min : + 30
Del. quantity +	
cm3/1000 strokes : 50.5	TOPOUT CONTROL
Tolerance + 0.5 +	TORQUE CONTROL
Check tolerance	Rated speed rpm : 880
cm3/1000s. : + 2.0 +	rack travel mm : 11.20
Spreed	Tolerance mm : +- 0.05
Tolerance	
cm3/1000 strokes : 2.5	Rated speed rpm : 500
Check tolerance	rack travel mm : 11.25
cm3/1000s. : 4.0	Tolerance mm : +- 0.10
I	
CONTROL LEVER +	
+	
control lever	DOMALIANA
position degree : 108.0	BREAKAWAY
tolerance degree : + 4.0	
RATED SPEED	Rack travel in mm : 10.20
	Rated speed rpm : 925
rack travel mm : 10.20	Tolerance 1/min : +- 5
Rated speed rpm : 925	
Tolerance 1/min : + 5 +	

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : + 0.75 Del. quantity

cm3/1000 strokes :

125.0

Tolerance

cm3/1000 strokes : + 7.5

Check tolerance

cm3/1000s, : +- 10.0

# LOW IDLE

325 Rated speed rpm 8.40 rack travel mm 0.10 Tolerance mm Del. quantity 11.0 cm3/1000 strokes : Tolerance cm3/1000 strokes 1.5 Check tolerance 3.5 cm3/1000S.Spreed Tolerance cm3/1000 strokes 4.0 Check tolerance cm3/1000s. 6.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.01.96 Test oil : ISO 4113

Combination No. : 0 400 876 425

Injection pump

Pump designation : PES6A95D41ORS2864 EP type number : 0 410 896 888

Governor

Governer design. : RSV400...1050A2C2263

: -7L

Governer no. : 0 420 232 606

Cust. part No. : 87 800 861

Customer-spec. information

Customer : FNH-GEOTECH

: 7.5 L Motor Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.60 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm: 14.10 Tolerance mm :  $\leftarrow$  0.10

Del. quantity cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance

8.0 cm3/1000S.

H19

Rated speed rpm	: 650	Ī	ASSEMBLY GOVERNOR	SETT	ING
Rack travel in mm Tolerance mm Del. quantity			Rated speed rpm rack travel mm		1093 11.60
cm3/1000 strokes Tolerance cm3/1000 strokes		<u> </u>	Rated speed rpm Tolerance 1/min rack travel mm		1128 5 4.00
Check tolerance cm3/1000s.	: + 4.5	I	rack travel mm Tolerance mm		0.85 0.55
Tolerance cm3/1000 strokes Check tolerance	: 5.5	+	Rated speed rpm rack travel mm	:	1094 11.60
cm3/1000s.	: 9.0	+	Rated speed rpm Tolerance 1/min	:	1129
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	Ŧ	rack travel mm	:	4.00
		1	rack travel mm Tolerance mm	: +-	0.85 0.55
GUIDE SLEEVE POSITRATED Rated speed rpm	FION : 800	+	Rated speed rpm rack travel mm	:	1095 11.60
Rack travel in mm Tolerance mm		+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	1130 5 4.00
governor spring pre-tension click setting x	: 2.50	+	rack travel mm Tolerance mm	: : +-	0.85 0.55
		++	Rated speed rpm rack travel mm		1096 11.60
Rated speed rpm Aneroid pressure		+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	1131 5 4.00
hPa Del. quantity cm3/1000 strokes Tolerance	: 1200 : 151.0	†	rack travel mm Tolerance mm	: : +-	0.85 0.55
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 3.0	T T	Rated speed rpm rack travel mm	:	1097 11.60
Spreed Tolerance cm3/1000 strokes		+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Tolerance 1/min rack travel mm	: +-	
Check tolerance cm3/1000s.	: 8.0	†	rack travel mm Tolerance mm	: +-	0.85 0.55
CONTROL LEVER		+	Rated speed rpm rack travel mm	:	1098 11.60
control lever position degree tolerance degree	: 100.0 : +- 4.0	+	Rated speed rpm Tolerance 1/min rack travel mm	: : +-	5

rack travel mm Tolerance mm		MEASUREMENT
LOW IDLE	+	Pressure hPa : - Rated speed rpm : 500 rack travel mm : 7.80 Tolerance mm : + 0.05
control lever position degree tolerance degree	: 78.0 : +- 4.0	Rated speed rpm : 500
	out bumper spring	Pressure hPa : 775 rack travel mm : 13.50 Tolerance mm : + 0.05
Rated speed rpm rack travel mm	: 650 +	Pressure hPa : 520 rack travel mm : 11.10
Testing:	‡	Tolerance mm : +- 0.20
Rated speed rpm rack travel mm Tolerance mm	: 650 + : 4.60 + : + 0.10 +	
rack travel mm	: 2.00	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm Tolerance 1/min	· 740 +	Aneroid pressure hPa : - Rated speed rpm : 500
TORQUE CONTROL		Del. quantity cm3/1000 strokes : 70.5 Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 14.10 +	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0
Rated speed rpm rack travel mm Tolerance mm	. 500	CM37 10005.
	+	STARTING FUEL DELIVERY
Rated speed rpm rack travel mm Tolerance mm	: 11.90 +	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 0.20
Rated speed rpm rack travel mm Tolerance mm	: 12.60	Del. quantity cm3/1000 strokes : 160.0 Tolerance
Rated speed rpm	: 950	cm3/1000 strokes : +- 8.0 Check tolerance
rack travel mm Tolerance mm		cm3/1000s. : + 11.0
ANEROID/ALTITUDE	+	
COMPENSATOR TEST	‡	LOW IDLE
SETTING	‡	Rated speed rpm : 650 rack travel mm : 4.60 Tolerance mm : +- 0.10
Rated speed rpm Pressure hPa rack travel mm	: 500 : 1200 : 14.15	Del. quantity cm3/1000 strokes : 20.0 Tolerance
Tolerance mm	: +- 0.10	cm3/1000 strokes : +- 2.0
1134		

Check tolerance cm3/1000\$. Spreed	: +-	4.5
Tolerance cm3/1000 strokes Check tolerance	:	5.5
cm3/1000s.	:	9.0

		1
BOSCH INJ. PUMP 1	TEST SPECIFICATIONS	x inside diameter: 3.0 x length mm : 1000
Note remarks		+ Congert min
Refer to Service adjustment instru See microcard(s)		REMARKS
Edition Test oil		(A) INJECTION PUMP SETTING VALUES
Combination No.	: 0 401 846 959	Set equal delivery quant. per values
Injection pump Pump designation EP type number	: PE6P120A720RS3293 : 0 411 826 801	BEGINNING OF DELIVERY
Governor Governer design.	: RQV2251000PA1016 : -6	Test pressure bar : 26.0 Tolerance bar : + 1.0
Governer no.		Prestroke mm : 3.55 Tolerance mm : + 0.05 Check
Cust. part No.	:	tolerance mm : + 0.10
Customer-spec. in	aformation	Rack travel in mm: 10.50
Customer		Firing order : 1-5-3-6-2- : 4
TEST BENCH REQUIR	EMENTS	+ Phasing : 0-60-120-180-240 : -300
Inlet line	: 4.2	Tolerance : + 0.30
Test oil inlet temp. °C Tolerance °C	: 40 : +- 2.0	tolerance °NW : + 0.75  BASIC SETTING
Overflow valve	: 1 417 413 025	Rated speed rpm : 1000
Inlet press. bar	: 1.5	Rack travel in mm: 14.65 Tolerance mm: + 0.05
Test nozzle holde assembly	: 1 688 901 019	Del. quantity cm3/1000 strokes : 218.0
Opening pressure bar	: 208.5	Tolerance cm3/1000 strokes : + 1.0
Tolerance bar	: +- 1.5	Check tolerance cm3/1000s. : + 4.0
Test lines Outside diameter		Spreed Tolerance cm3/1000 strokes : 5.0
outside didileter	. 0.0	+

Check tolerance	1	rack travel mm	: 4.00
cm3/1000s. :	9.0	Rated speed rpm Tolerance 1/min	: 1145
Del. quantity cm3/1000 strokes :	28.0	rack travel mm	: 0.50
Tolerance cm3/1000 strokes : - Check tolerance	<b>←</b> 3.0 ‡	Tolerance mm Rated speed rpm	
	<b>←</b> 6.0		
Tolerance cm3/1000 strokes :	8.0	LOW IDLE	
Check tolerance cm3/1000s. :	12.0	control lever	. 70.0
(B) SETTING OF INJECT	TTON PLIMP	position degree tolerance degree	
WITH GOVERNOR	1.101.7.3.11	Testing:	
No. of the Control of		Rated speed rpm rack travel mm	: 375 : 7.30
GUIDE SLEEVE POSITION	1	Tolerance mm	: +- 0.10
Rated speed rpm :	+	Rated speed rpm	
Rack travel in mm : Tolerance mm : +		CRT mm min.	
	†	Rated speed rpm	: 440
FULL LOAD DELIVERY AT	+	TORQUE CONTROL	
Rated speed rpm : Aneroid pressure	<del> </del>	Rated speed rpm	: 1000
hPa : Del. quantity	700	rack travel mm Tolerance mm	
cm3/1000 strokes : Tolerance	+	Rated speed rpm	
cm3/1000 strokes : + Check tolerance	+	rack travel mm Tolerance mm	: 14.65 : +- 0.10
cm3/1000S. : + Spreed Tolerance	- 4.0	ANEROID/ALTITUDE	**************************************
cm3/1000 strokes : Check tolerance	5.0	COMPENSATOR TEST	
cm3/1000s. :	9.0	SETTING	
		Rated speed rpm	: 500
CONTROL LEVER	Ī	Pressure hPa rack travel mm Tolerance mm	: 700 : 14.65 : +- 0.05
control lever position degree : tolerance degree : +	105.0		0.03
	- 4.0 +	MEASUREMENT	
RATED SPEED	- 4.0 +	Pressure hPa	: -
RATED SPEED  rack travel mm : Rated speed rpm : Tolerance 1/min : +	13.60 1045		: 500 : 12.00 : + 0.10

Pressure hPa 200 12.40 rack travel mm Tolerance mm : + 0.20 Pressure hPa 260 rack travel mm 13,45 : +- 0.05 Tolerance mm

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa

700 700 Rated speed rpm Del. quantity

cm3/1000 strokes : 226.5

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s. 6.0

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes 1.0

Check tolerance

cm3/1000s. 4.0

Spreed

Check tolerance

cm3/1000s. 8.0

### BREAKAWAY

13.60 Rack travel in mm: 1045 Rated speed rpm Tolerance 1/min 5

### STARTING FUEL DELIVERY

Rated speed rpm 100 Del. quantity cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

### LOW IDLE

Del. quantity cm3/1000 strokes : 28.0

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s. 6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

12.0 cm3/1000s.

### BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 03.01.96 : ISO 4113 Test oil

Combination No. : 0 402 746 949

Injection pump

Pump designation : PES6P120A720RS7224

: -2

: 0 412 726 893 EP type number

Governor

Governer design. : RQV275...1100PA975

: -3K

Governer no. : 0 421 815 350

Cust. part No. :

Customer-spec. information

: IVECO-FRANCE Customer Motor : 8460.41.406

# TEST BENCH REQUIREMENTS

Inlet line

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

: 140 min. L/h Tolerance l/h: +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

; 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 600

x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : <del>←</del> 0.05 Tolerance mm

Check

: ÷ 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.30

Check

: +- 0.50 tolerance "NW

Start of delivery mark

Check

tolerance °NW : +- 0.40

1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.75

Tolerance mm :  $\leftarrow$  0.05

Del. quantity	+ guide sleeve
cm3/1000 strokes : 218.	O + travel mm : 13.50
	+ Tolerance mm : + 0.50
Tolerance	
cm3/1000 strokes : + 1.0	j
tilis/ 1000 at 10100	→ GUIDE SLEEVE POSITION
Check tolerance	T GOIDE SELEVE POSITION
	7 7-4-3 4076
cm3/1000s. : +- 4.0	Rated speed rpm : 1235
-	<del></del>
Spreed	+ Rack travel in mm : 10.30
Tolerance	+ Tolerance mm : + 2.50
cm3/1000 strokes : 5.0	)
Check tolerance	+ FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	
CMD/10003 9.6	
Baki I awa ili awa 275	
Rated speed rpm : 275	+ Aneroid pressure
	† hPa : 1200
Rack travel in mm: 5.30	
Tolerance mm : + 0.20	cm3/1000 strokes : 218.0
Del. quantity	+ Tolerance
cm3/1000 strokes : 30.0	
Tolerance	- Check tolerance
cm3/1000 strokes : +- 3.0	
Check tolerance	+ Spreed
cm3/1000s. : +- 6.0	
Spreed	+ cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	$\frac{1}{2}$ cm3/1000s. : 9.0
Check tolerance	
cm3/1000s. : 12.0	1
· 12.0	
	CONTROL LEVED
(2) 000000000000000000000000000000000000	+ CONTROL LEVER
(B) SETTING OF INJECTION PUM	
WITH GOVERNOR	+ control lever
	+ position degree : 120.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	1
	+ RATED SPEED
Rated speed rpm : 275	
guide sleeve	rack travel mm : 11.70
	· · · · · · · · · · · · · · · · · · ·
travel mm : 1.90	
Tolerance mm : + 0.20	Tolerance 1/min : +- 5
	†
Rated speed rpm : 1145	+ rack travel mm : 4.00
guide sleeve	+ Rated speed rpm : 1245
travel mm : 10.40	Tolerance 1/min : + 15
Tolerance mm : + 0.15	;
	rack travel mm : 0.50
Rated speed rpm : 750	Tolerance mm : + 0.50
	Rated speed rpm : 1350
guide sleeve	
travel mm : 6.10	
Tolerance mm : +- 0.25	†
	+ ·
Rated speed rpm : 430	+ LOW IDLE
guide sleeve	+
travel mm : 3.60	<del> </del>
Tolerance mm : +- 0.25	
TOTAL GIRECTIME 1 TOTAL	1 00/16/10/6 60/0/
	⊥ position degree · 7/0
Dated aread man : 47/0	position degree : 74.0
Rated speed rpm : 1360	<pre>position degree : 74.0 tolerance degree : + 4.0</pre>

Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.30 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 7.00
Rated speed rpm	: 335
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.75 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.75 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 650 : 12.00 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 300 : 11.20 : ← 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : 1200 : 12.75 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	900 7.50 + 0.20
Rated speed rpm	: 900
Pressure hPa rack travel mm Tolerance mm	: 380 : 9.00 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 710 : 11.50 : + 0.05

START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 170 : < 220
Check speed 1/min Check	: > 150
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	: 1200
Rated speed rpm	: 900
Del. quantity cm3/1000 strokes	: 231.0
Tolerance	: + 3.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: +- 6.0
Aneroid pressure	
hPa	: 1200
Rated speed rpm	: 650
Del. quantity	
cm3/1000 strokes	: 238.0
Tolerance cm3/1000 strokes	: + 3.0
Check tolerance cm3/1000s.	: +- 6.0
• • • • • • • • • • • • • • • • • • • •	
Aneroid pressure	
hPa	: 650
Rated speed rpm Del. quantity	: 650
cm3/1000 strokes	: 126.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm	: 11.70
Rated speed rpm Tolerance 1/min	: 1160 : <del>+-</del> 5
TOTEL WHITE	
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity	
cm3/1000 strokes	: 140.0

Tolerance		
cm3/1000 strokes	: +-	15.0
Check tolerance		
cm3/1000s.	: +-	19.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm Del. quantity	: : +-	275 5.30 0.20	
cm3/1000 strokes	:	30.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s.	: +-	6.0	
Spreed Tolerance			
cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	:	12.0	

### BOSCH INJ. PUMP TEST SPECIFICATIONS

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 07.12.94 Test oil : ISO 4113

Combination No. : 0 402 746 949A

Injection pump

Pump designation : PES6P120A720RS7224

: -2

EP type number : 0 412 726 893

Governor

Governer design. : RQV275...1100PA975

: -3K

Governer no. : 0 421 815 350

Cust. part No.

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41.406

Power KW : 253.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 140 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance 'NW : +- 0.50

Start of delivery mark

Check

tolerance °NW : + 0.40

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : + 0.05

		Detect around now 1750
Del. quantity		Rated speed rpm : 1350 guide sleeve
cm3/1000 strokes	: 195.0	travel mm : 13.50
cast tood strokes	. 175.0	Tolerance mm : + 0.50
Tolerance		
cm3/1000 strokes	: + 1.0	
		GUIDE SLEEVE POSITION
Check tolerance	<u> </u>	<del> </del>
cm3/1000s.	: <del>+-</del> 4.0 -	Rated speed rpm : 1225
Sanand	***************************************	Pools thought in the 10,00
Spreed Tolerance	Ī	Rack travel in mm : 10.00 Tolerance mm : +- 1.30
cm3/1000 strokes	: 5.0	L Total transfer in 1.30
01107 1000 001 01100		
Check tolerance		FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s.	: 9.0	-
		Rated speed rpm : 1100
Rated speed rpm	: 275	Aneroid pressure
Rack travel in mm	: 5.50	- hPa : 1200 - Del. quantity
	: + 0.20	- Det. quantity - cm3/1000 strokes : 195.0
Del. quantity	0.20	- Tolerance
cm3/1000 strokes	: 26.0	- cm3/1000 strokes : +- 1.0
Tolerance	-	- Check tolerance
	: <b>←</b> 3.0	- cm3/1000s. : $+$ 4.0
Check tolerance	<u></u>	Spreed
cm3/1000s.	: +- 6.0	Tolerance
Spreed	1	- cm3/1000 strokes : 5.0
Tolerance cm3/1000 strokes	: 8.0	- Check tolerance - cm3/1000s. : 9.0
Check tolerance	. 0.0	- CIII 10003
	: 12.0	
0.000		
	_}	· · · · · · · · · · · · · · · · · · ·
	4	CONTROL LEVER
(B) SETTING OF INJ	ECTION PUMP -	_
(B) SETTING OF INJ	ECTION PUMP	- control lever
	ECTION PUMP -	- control lever - position degree : 119.0
WITH GOVERNOR		- control lever
		control lever position degree : 119.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVE		- control lever - position degree : 119.0
GUIDE SLEEVE TRAVE		control lever position degree : 119.0 tolerance degree : +- 4.0 RATED SPEED
GUIDE SLEEVE TRAVE		control lever position degree : 119.0 tolerance degree : +- 4.0
GUIDE SLEEVE TRAVE	L 275	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED rack travel mm : 10.70
WITH GOVERNOR  GUIDE SLEEVE TRAVER  Rated speed rpm guide sleeve travel mm Tolerance mm	275 : 2.00 : + 0.20	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	: 275 : 2.00	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	275 : 2.00 : + 0.20	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	275 : 2.00 : + 0.20 : 1155	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	275 : 2.00 : + 0.20	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	L: 275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15
WITH GOVERNOR  GUIDE SLEEVE TRAVE  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15 : 764	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15 : 764 : 6.24 : + 0.25	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350
GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	275 : 2.00 : + 0.20 : 1155 : 10.55 : + 0.15 : 764	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	275  2.00  40.20  1155  10.55  10.55  764  6.24  10.25  430	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350
GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	275  2.00  4.0.20  1155  10.55  10.55  430  3.63	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350  LOW IDLE
GUIDE SLEEVE TRAVER Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	275  2.00  40.20  1155  10.55  10.55  764  6.24  10.25  430	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 10.70 Rated speed rpm : 1145 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1350

tolerance degree : + 4.0 Rated speed rpm :> Testing: Check Rated speed rom 275 speed 1/min 5.50 rack travel mm Check Tolerance mm : + 0.10speed 1/min 100 Rated speed rpm : > 6.70 CRT man min. 300 Rated speed rpm Del. quantity TORQUE CONTROL Tolerance 1100 Rated speed rpm 11.75 rack travel mm cm3/1000s. Tolerance mm : **←** 0.05 008 Rated speed rpm 11.75 rack travel min : Tolerance mm : +- 0.10 Del. quantity 500 Rated speed rpm • rack travel mm 10.95 Tolerance Tolerance mm : +- 0.15 Rated speed rpm : 350 cm3/1000s. 11.40 rack travel mm Tolerance mm : + 0.20BREAKAWAY ANEROID/ALTITUDE COMPENSATOR TEST SETTING 1100 Rated speed rpm Pressure hPa 1200 11.75 rack travel mm : **←** 0.05 Tolerance mm Del. quantity **MEASUREMENT** Tolerance Rated speed rpm 1100 360 cm3/1000s.Pressure hPa 8.70 rack travel mm : +- 0.20 Tolerance mm 600 Pressure hPa 10.85 LOW IDLE rack travel mm : +- 0.05 Tolerance mm START CUT-OUT

170 Rated speed rpm : < 220 : > 150 240 : < FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1200 Rated speed rom 500 cm3/1000 strokes : 220.0 cm3/1000 strokes : +-3.0 Check tolerance 6.0 Aneroid pressure 500 Rated speed rpm cm3/1000 strokes : 120.0 cm3/1000 strokes : +-1.0 Check tolerance : +-4.0 Rack travel in mm : 10.70 Rated speed rpm : Tolerance 1/min : +-STARTING FUEL DELIVERY Rated speed rpm 100 140.0 cm3/1000 strokes : cm3/1000 strokes : +- 15.0Check tolerance : +- 19.0 275 Rated speed rpm 5.50 rack travel mm Tolerance mm 0.20

Del. quantity		
cm3/1000 strokes	:	26.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

### BOSCH INJ. PUMP TEST SPECIFICATIONS

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.01.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 950

Injection pump

Pump designation : PES6P120A720RS7224

: -2

: 0 412 726 893 EP type number

Governor

Governer design. : RQV275...1100PA975

: -4K

: 0 421 815 351 Governer no.

Cust. part No.

Customer-spec. information

: IVECO-FRANCE Customer : 8460.41.320 Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 076

2.5 Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

: 140 min. L/h Tolerance L/h : **←** 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 5.15 : +- 0.05 Tolerance mm Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: +- 0.30Tolerance

Check

: + - 0.50tolerance °NW

Start of delivery mark

Check

tolerance °NW : + 0.40

Barrel no. 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.45 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 192.0	guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : + 1.0	
Check tolerance cm3/1000s. : +- 4.0	GUIDE SLEEVE POSITION  Rated speed rpm : 1235
Spreed Tolerance cm3/1000 strokes : 5.0	Rack travel in mm : 10.30 Tolerance mm : + 2.50
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 275	Rated speed rpm : 1100 Aneroid pressure hPa : 1200
Rack travel in mm : 5.70 Tolerance mm : + 0.20	Del. quantity cm3/1000 strokes : 192.0
Del. quantity cm3/1000 strokes : 30.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : + 3.0 + Check tolerance	cm3/1000s. : +- 4.0 Spreed
cm3/1000S. : + 6.0 + 5preed + 7olerance	Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER  control lever position degree : 120.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0  RATED SPEED
Rated speed rpm : 275 guide sleeve travel mm : 1.90 Tolerance mm : + 0.20	rack travel mm : 10.40 Rated speed rpm : 1170 Tolerance 1/min : +- 5
Rated speed rpm : 1145 guide sleeve travel mm : 10.40 Tolerance mm : + 0.15	rack travel mm : 4.00 Rated speed rpm : 1240 Tolerance 1/min : +- 15
Rated speed rpm : 750 + guide sleeve travel mm : 6.10 + Tolerance mm : + 0.25	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1350
Rated speed rpm : 430 + guide sleeve +	LOW IDLE
travel mm : 3.60 + Tolerance mm : + 0.25	control lever position degree : 73.0
Rated speed rpm : 1360	tolerance degree : +- 4.0

: 275 : 5.70 : + 0.10
: 100
: > 7.20
: 335
: 1100 : 11.45 : ← 0.05
: 900 : 11.10 : + 0.10
: 650 : 10.20 : +- 0.15
: 400 : 9.60 : +- 0.20
: 1100 : 1200 : 11.45 : +- 0.05
: - : 1100 : 7.80 : +- 0.20
: 1100
. 1100
: 340 : 8.70 : + 0.20

START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 170 : < 220
Check speed 1/min Check	: > 150
speed 1/min	: < 240
FUEL DELIVERY CHA	RACTERISTICS
Augustal musiacous	
Aneroid pressure hPa	: 1200
Rated speed rpm	: 1200
Del. quantity	. 700
cm3/1000 strokes Tolerance	: 189.0
cm3/1000 strokes	: <del>+</del> 3.0
Check tolerance cm3/1000s.	: + 6.0
Anonoid procesure	
Aneroid pressure hPa	: 1200
Rated speed rpm	: 650
Del. quantity	. 656
cm3/1000 strokes	: 185.0
Tolerance	
cm3/1000 strokes	: <del></del> 3.0
Check tolerance	
cm3/1000s.	: +- 6.0
Amenadal massayas	
Aneroid pressure hPa	
Rated speed rpm	: 650
Del. quantity	. 333
cm3/1000 strokes	: 126.0
Tolerance	
cm3/1000 strokes	: <del>+</del> 1.0
Check tolerance cm3/1000s.	: +- 4.0
CIID7 10005.	4.0
BREAKAWAY	
Rack travel in mm	: 10.40
Rated speed rpm	
Tolerance 1/min	: +- 5
STARTING FUEL DELI	[VERY
Rated speed rpm	: 100
Del. quantity	
cm3/1000 strokes	: 140.0

Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

LOW IDLE

275 Rated speed rpm 5.70 rack travel mm Tolerance mm 0.20 Del. quantity cm3/1000 strokes 30.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. 12.0

#### BOSCH INJ. PUMP TEST SPECIFICATIONS

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 29.11.94 Test oil : ISO 4113

Combination No. : 0 402 746 950A

Injection pump

Pump designation : PES6P120A720RS7224

: -2

EP type number

Governor

Governer design. : RQV275...1100PA975

: -4K

Governer no. :

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41.320

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 140 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.15 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance  $^{\circ}NW$  : +- 0.50

Start of delivery mark

Check

tolerance °NW : + 0.40

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.65
Tolerance mm : + 0.05

	+	Rated speed rpm	: 1100
Del. quantity cm3/1000 strokes	: 168.0	Aneroid pressure hPa	: 1200
Tolerance cm3/1000 strokes	; + 1.0	Del. quantity cm3/1000 strokes Tolerance	: 168.0
Check tolerance		cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000s.	: +- 4.0	cm3/1000s. Spreed	: +- 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0	Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 5.0 : 9.0
Check tolerance cm3/1000s.	: 9.0		
(B) SETTING OF IN	AJECTION PUMP	CONTROL LEVER	
WITH GOVERNOR		control lever position degree tolerance degree	
GUIDE SLEEVE TRAV	/EL	RATED SPEED	
Rated speed rpm guide sleeve	: 275	rack travel mm	: 10.30
travel mm	: 1.90 I	Rated speed rpm	
Tolerance mm	: + 0.20	Tolerance 1/min	: +- 5
Rated speed rpm	: 1145	rack travel mm	: 4.00
guide sleeve	+	Rated speed rpm	: 1235
travel mm	: 10.40	Tolerance 1/min	: <del>+</del> 15
Tolerance mm	: + 0.15		0.50
Rated speed rpm	: 750	rack travel mm Tolerance mm	: 0.50 : +- 0.50
guide sleeve	· /30	Rated speed rpm	
travel mm	: 6.10	Nated Speed 1 pill	. 1336
Tolerance mm	: + 0.25 +		
	+	**************************************	
Rated speed rpm guide sleeve	: 430	LOW IDLE	
travel mm	: 3.60		
Tolerance mm	: ← 0.25 +	control lever	
	+	position degree	
Rated speed rpm guide sleeve	+	tolerance degree	: +- 4.0
travel mm	: 13.50 +	Testing:	
Tolerance mm	: <del>+- 0.50 +</del>	Detect aread non	: 275
		Rated speed rpm rack travel mm	: 5.30
GUIDE SLEEVE POSI	TION	Tolerance mm	: + 0.10
4017E 0EEE1E . 402	+	, , , , , , , , , , , , , , , , , , , ,	
Rated speed rpm	: 1235	Rated speed rpm	: 100
Rack travel in mm Tolerance mm		CRT mm min.	: > 6.80
		Rated speed rpm	: 335
FULL LOAD DELIVER	Y AT FULL LOAD STOP		<del></del>
	+	TORQUE CONTROL	

Rated speed rpm rack travel mm Tolerance mm	: 1100 : 10.65 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 900 : 10.20 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1200 : 10.65 : + 0.05
MEASUREMENT	
Rated speed rpm	: 1100
Pressure hPa rack travel mm Tolerance mm	: 420 : 8.40 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 600 : 10.05 : ← 0.05
START CUT-OUT	
Rated speed rpm Rated speed rpm	
Check speed 1/min	: > 150
Check speed 1/min	: < 240
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 1200 : 700
Del. quantity cm3/1000 strokes	
Tolerance cm3/1000 strokes	
Check tolerance	

Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 118.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 4.0 BREAKAWAY Rack travel in mm : 10.30
Rated speed rpm : 1170
Tolerance 1/min : +- 5 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0

End of test specification sheet

cm3/1000s.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: SOF Test scheet : 21.03.96 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/10F2000R697 Type number : 0 460 404 088

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

Engine : 8140.67.2585

KW: 60 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer>: 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly>

Opening

Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery

Prestroke mm: 0.2

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Speed

Setting value mm: 2.10...2.30

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200

Setting value bar: 6.00...6.60

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 1200 Speed

Del. quantity cm3/

1000s.: 42.00...43.00

Shutoff

electromagnet>Volt: 12 cm3/: 2.5 Dispersion 1000s.: (2.5)

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

1000s.: 12.00...16.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5) >

Full-load speed regulation

1/min: 2300 Speed

Del. quantity cm3/

1000s.: 23.00...27.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 70.00...110.00

mind> 1000s.: 70.00

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1200 hPa: 12 Charge press

cm3/ Inj.-qty.

difference> 1000S.: -15.0...21.0 *

Shutoff

electromagnet>Volt: 12 TD-travel dif.measurement

1/min: 1200 1.Speed

TD-travel

difference> mm: -0.7...0.9 *

Shutoff

electromagnet>Volt: 12

Inspection pump test specifications	+ Shutoff
Test specifications in parentheses	<pre>+ electromagnet&gt;Volt: 12</pre>
•	+ Del. quantity cm3/: 0.003.00
Timing-device characteristic:	+ > 1000s.: -
	+ 2nd speed 1/min: 2400
1st speed 1/min: 1200	+ Shutoff
TD travel mm: 2.102.30	+ electromagnet Volt: 12
> mm: (1.602.80)	+ Del. quantity cm3/: 5.015.0
electromagnet>Volt: 12	+ > 1000s.: -
2nd speed 1/min: 1800	+ 3rd speed 1/min: 2300
TD travel mm: 6.006.60	+ Shutoff
> mm: (5.607.00)	<pre>+ electromagnet&gt;Volt: 12</pre>
Shutoff	+ Del. quantity cm3/: 23.027.0
electromagnet>Volt: 12	+ > 1000s.: (19.031.0)
3rd speed 1/min: 1600	+ 4th speed 1/min: 2000
TD travel mm: 4.505.30	+ Shutoff
> mm: (4.205.60)	+ electromagnet>Volt: 12
Shutoff	<pre>Del. quantity cm3/: 39.542.5</pre>
electromagnet>Volt: 12	+ > 1000s.: (38.543.5)
4th speed 1/min: 2100	+ 5th speed 1/min: 1500
TD travel mm: 7.007.80	+ Shutoff
> mm: (6.708.10)	<pre>+ electromagnet&gt;Volt: 12</pre>
Shutoff	+ Del. quantity cm3/: 40.5043.50
electromagnet>Volt: 12	+ > 1000s.: (39.5044.50)
	+ 6th speed 1/min: 1200
Supply-pump pressure characteristic:	+ Shutoff
	<pre></pre>
1st speed 1/min: 600	+ Del. quantity cm3/: 42.043.0
Supply-pump	+ > 1000s.: (40.544.5)
pressure> bar: 4.104.70	+ 7th speed 1/min: 600
Shutoff	Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
2nd speed 1/min: 1200	+ Del. quantity cm3/: 36.040.0
Supply-pump	+ > 1000s.: (35.041.0)
pressure> bar: 6.006.60	1000011 (0510111110)
Shutoff	$\perp$
electromagnet>Volt: 12	1
3rd speed 1/min: 2100	Electr. shutoff:
Supply-pump	
pressure> bar: 8.509.10	1st speed 1/min: 375
Shutoff	Del. quantity cm3/: 0.003.00
electromagnet>Volt: 12	1000s.: (0.003.00)
etectromagnet/vott. 12	Shutoff
Overlow quantity at overflow valve:	electromagnet>volt: -
overtow qualitity at over flow valve.	I etectionagnet/vott.
1st speed 1/min: 600	Idle delivery:
Shutoff	I face decivery.
electromagnet>Volt: 12	1st speed 1/min: 375
Overflow : 41.7086.10	Shutoff
	al anthromomoty Valta 12
	Del. quantity cm3/: 12.0016.00
2nd speed 1/min: 2100 Shutoff	> 1000s.: (9.0019.00)
	Dispersion cm3/: 2.5
electromagnet>Volt: 12 Overflow: 55.60139.00	+ > 1000s.: (2.5)
	2nd speed 1/min: 465
quantity> cm3/10s: (40.60154.00)	+ 2nd speed 1/min: 465 + Shutoff
Dalawaniant and brooks in them	1
Delivery-quant. and breakaway char.:	+ electromagnet>Volt: 12
	+ Del. quantity cm3/: 0.003.00 + > 1000s.: (0.003.00)
And annual Almine 2400	7 / 10003.: (0.003.00)
1nd speed 1/min: 2600	Τ

Load-dependent start of delivery: electromagnet>Volt: 12 Del. quantity cm3/: 70.00...110.00 Inj.-qty.dif.measurement: 1000s.: (70.00...110.00) 1/min: 1200 1st speed Inj.-qty. cm3/ : -13.0..15.0 # Shutoff electromagnet: difference> 1000s.: -Shutoff Cut-in electromagnet>Volt: 12 >min voltage : 10.0 2nd speed 1/min: 1200 Rated voltage : 12.0 cm3/: 0.00...3.00 " Inj.-qty. difference> 1000s.: -Mounting and assembly dimensions: Shutoff electromagnet Volt: 12 KF mm: 5.6...6.0 MS mm: 1.6...2.0 TD-travel dif.measurement: FH mm: KSB 10.0 correttore anticipo iniezione (SV): TLA-E mm: 9.0 1st speed 1/min: 1200 mm: SPALTMAB TD-travel : -0.6...1.4 " XL mm: A = 0.8..3.0difference> Ya mm: 42.9...44.9 mm: -Shutoff mm: 36.0...44.0 electromagnet>Volt: 12 Remarks: SP press.—dif.measurement: : pompa di mandata (FP): 1/min: 1200 Ya = Distance between VE flange and 1st speed Supply pumpspeed-control lever in idle pressure > : -0.1...0.3 # position difference> Measurement point = edge of control bar: lever on drive end Shutoff electromagnet>Volt: 12 Part-load del.at 3rd inj.-qty. Yb = Distance between VE flange and speed-control lever in rated speed terza fermo della portata stop (EGR set) position scarico) (ARF) Measurement point = edge of control lever on distributor-head end gaz d'échappement-ARF) mm: 12.0 Spacing 1/min: 1200 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 31.0...32.0 1000s.: (29.0...34.0) Automatic starting fuel delivery: 1/min: 300 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.00...85.00 1000s.: (55.00...85.00) 1/min: 500 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00) 1/min: 100 4th speed

Shutoff

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: FOR Test scheet Edition : 12.02.96

replaces :

Calibrating oil : ISO-4113

: VE4/11F2000R624-1 Injection pump

Type number : 0 460 414 123

Customer Part-No. :

Customer-specific information Customer : FORD SWISS

: 2.5L DI Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer>: 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 114

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0.4

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery block mm: 0.52 Piston stroke mm: +-0.05

Outlet > : B

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed

Setting value mm: 2.60...2.80

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 7.10...7.70

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 28.30...28.70 F >

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 425 Speed

Del. quantity cm3/

1000s.: 9.00...11.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.0 1000s.: (4.0)

Full-load speed regulation

1/min: 2200 Speed

Del. quantity cm3/

1000s.: 25.00...27.00

Shutoff

electromagnet>Volt: 12 cm3/: 3.0 Dispersion 1000s.: (4.0)

Start:

Speed 1/min: 100

Del. quantity cm3/: 35.00...65.00

mind> 1000s.: 45.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1000 1st speed

mm: 1.10...1.90 TD travel mm: (0.60...2.40)

electromagnet>Volt: 12 2nd speed

1/min: 1250 mm: 2.60...2.80 TD travel mm: (2.10...3.30)

Shutoff

electromagnet>Volt: 12 1/min: 2000 3rd speed

TD travel mm: 5.60...6.40

>	mm:	(5.106.90)	+	Shutoff
Shutoff			+	electromagnet>Volt: 12
electromagn	et>Volt:	12	+	Del. quantity cm3/: 25.0027.00
			+	> 1000s.: (21.0031.00
Supply-pump	pressur	e characteristic:	+	6th speed 1/min: 1700
<b>.</b>			+	Shutoff
1st speed		500	†	electromagnet>Volt: 12
Supply-pump	L	F /0 / 00	†	Del. quantity cm3/: 39.842.2
pressure>	par:	5.406.00	†	> 1000s.: (37.542.5)
Shutoff		13	†	7th speed 1/min: 1150
electromagno			Ť	Shutoff
Supply-pump		1130	T	electromagnet>Volt: 12 Del. quantity cm3/: 35.536.5 E
pressure>		6.907.50	I	> 1000s.: (33.538.5)
Shutoff	Dat .	0.707.50	I	8th speed 1/min: 500
electromagne	0+10//<+a	12	I	Shutoff
3rd speed	1/min:		1	electromagnet>Volt: 12
Supply-pump		1230	1	Del. quantity cm3/: 28.3028.70
pressure>	bar:	7.107.70	1	> 10008.: (25.5031.50
Shutoff			1	1000011 (231)
electromagne	et>Volt:	12	1	
4th speed			+	
Supply-pump			+	Electr. shutoff:
pressure>	bar:	8.709.30	+	
Shutoff			+	1st speed 1/min: 425
electromagne	et>Volt:	12	+	Del. quantity cm3/: 0.003.00
			+	> 1000s.: (0.003.00)
Overlow quar	ntity at	overflow valve:	+	Shutoff
			+	electromagnet>volt: -
1st speed	1/min:	500	+	
Shutoff		•=	+	Idle delivery:
electromagne	et>Volt:	12	+	4
		97.30141.70	†	1st speed 1/min: 425
quantity> 0	m5/1US:	(82.30156.70)	<b>†</b>	Shutoff
2nd speed	(/man:	1950	Ť	electromagnet>Volt: 12
Shutoff electromagne	+>1/51++	10	Τ	Del. quantity cm3/: 9.0011.00 > 1000s.: (6.0014.00)
Overflow		115.30184.80	I	Dispersion cm3/: 3.0
		(100.30199.80)	Ι	> 1000s.: (4.0)
qualitity>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(100.30177.007	I	2nd speed 1/min: 500
Delivery-due	ent and	breakaway char.:	1	Shutoff
becivery que	arti aria	Di Caraway Chai ::	1	electromagnet>Volt: 12
			1	Del. quantity cm3/: 0.006.00
1nd speed	1/min:	1950	+	> 1000s.: (0.006.00)
HBA-stroke		7.2	+	· •
Shutoff			+	Part-load del.at 3rd injqty.
electromagne	t>Volt:	12	+	terza fermo della portata
Del. quantit		40.342.7 D	+	stop (EGR set)
>		(39.044.0) D	+	scarico) (ARF)
2nd speed	1/min:	2400	+	gaz d'échappement-ARF)
Shutoff			+	Spacing mm: 20.0
electromagne			+	4
Del. quantit			†	1st speed 1/min: 1250
	1000s.:		†	Shutoff
3rd speed	1/min:	<b>2300</b>	†	electromagnet>Volt: 12
Shutoff	<b>4</b> ×11-14-	10	Ť	Del. quantity cm3/: 22.0023.00 > 1000s.: (20.0025.00)
electromagne			Ţ	/ 10003.1 (20.0025.00.
vel. quantit	y UM⊅/: 1000c -	9.0015.00 (6.0018.00)	I	Automatic starting fuel delivery:
	1/min:		I	Addinate starting fuet detivery:
4th speed	17011111	2200	T	

1st speed 1/min: 300

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 33.00...63.00

1000s.: -

2nd speed 1/min: 480

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 20.00...32.00

1000s.: -

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 40.00...65.00

1000s.: -

Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 2.7...2.9 K

KF mm: KOT

mm: 1.6...2.0 MS

mm: 7.2 HBA stroke

mm: 41.0...44.0 Ya

mm: 63.0...75.0 Yb

Remarks:

Ya = Distance between VE flange and

speed-control lever in idle position

Measurement point = edge of control

Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed

position

Measurement point = edge of control

Lever on distributor-head end

Always pay attention to test instructions for DISTRIBUTOR-TYPE INJECTION PUMPS FOR DI ENGINES!

Information additionally required for testing fuel-injection pump:

TEST PREREQUISITES

Calibrating-oil return temperature with

thermometer, °C

Calibrating-oil inlet

temperature, °C :35...40

Dwell speed, 1/min :1100 Feedback voltage, mV

SETTINGS/TEST SPECIFICATIONS FOR FUEL-INJECTION PUMP,

delivery rates

Test speed, 1/min :<500

Temperature stabilisation

speed 1/min :2200

Output temperature, °C :51 Measurement temperature, °C:49

:500...799 Test speed, 1/min

Temperature stabilisation

speed 1/min :2200

Output temperature, °C :48 Measurement temperature, °C:46

:800...1199 Test speed, 1/min

Temperature stabilisation

speed 1/min :2200/100

Output temperature, °C :45 Measurement temperature, °C:45

Test speed, 1/min :1200...1700

Temperature stabilisation

speed 1/min :100 Output temperature, °C :42

Measurement temperature, °C:44

Test speed, 1/min :>1700

Temperature stabilisation

speed 1/min :100

Output temperature, °C :41

Measurement temperature, °C:43

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : MAX Edition : 14.03.96 replaces Calibrating oil : ISO-4113 Injection pump : VE4/11F1900R653 Type number : 0 460 414 127 Customer Part-No. : Customer-specific information Customer : MAXTON Engine : GEMINI TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 116 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -> (from BDC): -Start of delivery block Piston stroke mm: 1.54 Outlet > : A Injection-pump setting values Test specifications in parentheses

Charge press. hPa: 1200 Setting value mm: 3.10...3.30 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1600 Speed Charge press hPa: 1200 Setting value bar: 7.30...7.90 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1150 Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 69.0...70.0 Shutoff electromagnet>Volt: 12 cm3/: 3.0 Dispersion 1000s.: (4.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 50.5...51.5 > Shutoff electromagnet>Volt: 12 Low-idle speed regulation 1/min: 350 Speed Del. quantity cm3/ > 1000s.: 16.5...20.5 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 4.0 1000s.: (5.0) Full-load speed regulation Speed 1/min: 2100 Charge press hPa: 1200 Del. quantity cm3/ > 1000s.: 48.0...52.0 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 61.0...111.0 1000s.: 61.0 <br/>d> Shutoff electromagnet>Volt: 12

Inspection-pump test specifications

Speed

Timing-device travel

1/min: 1600

Test specifications in parentheses	+ electromagnet>Volt: 12 + Overflow : 111.10194.80
Timing-device characteristic:	quantity> cm3/10s: (96.10209.80)
1st speed 1/min: 1300	Delivery-quant. and breakaway char.:
Charge press hPa: 1200	detivery quarter and preakandy briants.
TD travel mm: 0.801.40	1
> mm: (0.501.70)	1nd speed 1/min: 700
electromagnet>Volt: 12	
	<pre>+ Charge-air pressure-setting + point&gt; hPa: 600</pre>
2nd speed 1/min: 1600	
Charge press hPa: 1200	+ Shutoff
TD travel mm: 3.103.30	+ electromagnet>Volt: 12
> mm: (2.703.70)	+ Del. quantity cm3/: 65.066.0
Shutoff	+ > 1000s.: (62.568.5)
electromagnet>Volt: 12	+ 2nd speed 1/min: 2430
3rd speed 1/min: 1900	+ Charge press. hPa: 1200
Charge press hPa: 1200	+ Shutoff
TD travel mm: 4.605.20	+ electromagnet Volt: 12
> mm: (4.305.50)	+ Del. quantity cm3/: 0.003.00
Shutoff	+ > 1000s.: -
electromagnet>Volt: 12	+ 3rd speed 1/min: 2250
etectromagnet/vott: 12	
A	+ Charge press. hPa: 1200
Supply-pump pressure characteristic:	+ Shutoff
	+ electromagnet>Volt: 12
1st speed 1/min: 600	+ Del. quantity cm3/: 21.031.0
Charge press. hPa: 1200	+ > 1000s.: (20.032.0)
Supply-pump	+ 4th speed 1/min: 2100
pressure> bar: 3.704.30	+ Charge press. hPa: 1200
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
2nd speed 1/min: 1300	Del. quantity cm3/: 48.0052.00
	+ > 1000s.: (45.0055.00)
Charge press. hPa: 1200	
Supply-pump	+ 5th speed 1/min: 1850
pressure> bar: 6.407.00	+ Charge press. hPa: 1200
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
3rd speed 1/min: 1600	+ Del. quantity cm3/: 70.574.5
Charge press. hPa: 1200	+ > 1000s.: (69.575.5)
Supply-pump	+ 6th speed 1/min: 1150
pressure> bar: 7.307.90	+ Charge press. hPa: 1200
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
4th speed 1/min: 1900	+ Del. quantity cm3/: 69.070.0
Charge press. hPa: 1200	+ > 1000s.: (67.072.0)
Supply-pump	+ 7th speed 1/min: 900
pressure> bar: 8.308.90	Charge press. hPa: 1200
Shutoff	Shutoff
· · · · · ·	
electromagnet>Volt: 12	+ electromagnet>Volt: 12
	+ Del. quantity cm3/: 70.075.0
Overlow quantity at overflow valve:	+ > 1000s.: (68.576.5)
	+ 8th speed 1/min: 500
1st speed 1/min: 500	+ Charge press. hPa: -
Charge press. hPa: 1200	+ Shutoff
Shutoff	<pre>+ electromagnet&gt;Volt: 12</pre>
electromagnet>Volt: 12	Del. quantity cm3/: 50.551.5
Overflow : 88.80133.30	+ > 1000s.: (48.054.0)
quantity> cm3/10s: (73.80148.30)	
2nd speed 1/min: 1850	1
Charge press. hPa: 1200	1
	Flectr. shutoff:
Shutoff	T CLECTI . SHULDII.

1/min: 350 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 16.5...20.5 1000s.: (13.5...23.5) cm3/: 4.0 Dispersion 1000s.: (5.0) 1/min: 315 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 33.0...41.0 1000s.: (30.0...44.0) > 3rd speed 1/min: 430 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity_cm3/: 34.00...74.00 1000s.: -1/min: 250 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.00...80.00 1000s.: -Shutoff electromagnet: Cut-in : 10.0 >min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 2.7...2.9 K mm: KOT KF mm: 1.3...1.6 MS1 mm: 44.0...48.0 Ya Yb mm: 50.5...61.5 Remarks:

Ya = Distance between VE flange and

speed-control lever in idle
position
Measurement point = edge of control
lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : MWM Edition : 01.03.96 replaces Calibrating oil : ISO-4113 Injection pump : VE4/12F1175R533 : 0 460 424 098 Type number Customer Part-No. : Customer-specific information Customer : MWM Engine : TD 226-B4 DI TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 110 assembly> Openina 0 bar: 247.00...253.00 Pressure> Perforated-plate mm: 0.5 diameter> Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses

Supply-pump pressure 1/min: 800 Setting value bar: 6.70...7.30 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 800 Speed Del. quantity cm3/ 1000s.: 76.8...77.8 > Shutoff electromagnet>Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5) Low-idle speed regulation 1/min: 275 Speed Del. quantity cm3/ 1000s.: 7.0...13.0 > Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.5 > 1000s.: (5.0) Full-load speed regulation 1/min: 1175 Speed Del. quantity cm3/ 1000s.: 50.0...56.0 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 99.0...101.0 mind> 1000s.: 99.0 Shutoff electromagnet>Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 500 1st speed mm: 1.6...2.4 TD travel > mm: (1.3...2.7) electromagnet>Volt: 12 2nd speed 1/min: 900 mm: 4.7...5.5 TD travel mm: (4.4...5.8) Shutoff electromagnet>Volt: 12 3rd speed 1/min: 800

mm: 4.2...4.6

TD travel

Speed

Shutoff

Timing-device travel

electromagnet>Volt: 12

1/min: 800

Setting value mm: 4.20...4.60

/ mm: (3.7)	† > 10005.: (70.076.0)
	+ 6th speed 1/min: 800
Supply-pump pressure characteristic:	+ Shutoff
	+ electromagnet>Volt: 12
1st speed 1/min: 500	Del. quantity cm3/: 76.877.8
Supply-pump	+ > 1000s.: (74.879.8)
supply pump	
pressure> bar: 5.46.0	+ 7th speed 1/min: 600
Shutoff	+ Shutoff
electromagnet>Volt: 12	<pre>+ electromagnet&gt;Volt: 12</pre>
2nd speed 1/min: 800	+ Del. quantity cm3/: 72.078.0
Supply-pump	+ > 1000s.: (69.580.5)
pressure> bar: 6.77.3	+ 8th speed 1/min: 400
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
3rd speed 1/min: 1100	† Del. quantity cm3/: 69.075.0
Supply-pump	+ > 1000s.: (68.076.0)
pressure> bar: 7.68.2	+
Shutoff	1
electromagnet>Volt: 12	Mech. shutoff:
Ctobs. Ollag. 10ts. 15	
Overlow quantity at overflow valve:	1st speed 1/min: 1100
overtow quantity at overitow valve.	
4	+ Del. quantity cm3/: 0.003.00
1st speed 1/min: 400	+ > 1000s.: (0.003.00)
Shutoff	+ Shutoff
electromagnet>Volt: 12	<pre>+ electromagnet&gt;volt: 12</pre>
Overflow : 102.7142.2	1
quantity> cm3/10s: (87.7157.2)	+ Electr. shutoff:
2nd speed 1/min: 1100	1 Coott. Shatott.
	1-1
Shutoff	+ 1st speed 1/min: 275
electromagnet>Volt: 12	+ Del. quantity cm3/: 0.003.00
Overflow : 111.1166.6	+ > 1000s.: (0.003.00)
quantity> cm3/10s: (96.1181.6)	+ Shutoff
	<pre>+ electromagnet&gt;volt: -</pre>
Delivery-quant. and breakaway char.:	+
	idle delivery:
	1
1nd speed 1/min: 1300	+ 1st speed 1/min: 275
Shutoff	Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 0.003.00	+ Del. quantity cm3/: 7.0013.00
> 1000s.: -	+ > 1000s.: (3.5016.50)
2nd speed 1/min: 1250	+ Dispersion cm3/: 3.5
Shutoff	+ > 1000s.: (6.5)
electromagnet Volt: 12	+ 2nd speed 1/min: 350
	+ Shutoff
Del. quantity cm3/: 0.015.0	· · · · · · · · · · · · · · · · · · ·
> 1000s.: -	+ electromagnet>Volt: 12
3rd speed 1/min: 1200	+ Del. quantity cm3/: 0.003.00
Shutoff	+ > 1000s.: (0.003.00)
electromagnet>Volt: 12	+
Del. quantity cm3/: 15.0045.00	Automatic starting fuel delivery:
> 1000s.: -	1
4th speed	1st speed 1/min: 250
Shutoff	+ Shutoff
electromagnet>Volt: 12	+ electromagnet>Volt: 12
Del. quantity cm3/: 50.056.0	+ Del. quantity cm3/: 60.0090.00
> 1000s.: (44.561.5)	+ > 1000s.: -
5th speed	+
Shutoff	+ 2nd speed 1/min: 150
electromagnet>Volt: 12	+ Shutoff
Del. quantity cm3/: 71.574.5	+ electromagnet>Volt: 12
the thirty of the second of th	

Del. quantity cm3/: 90.00...140.00 > 1000s.: -

4th speed 1/min: 100

Shutoff

electromagnet>Volt: 12

Del. quantity cm3/: 99.0...101.0 V > 1000S.: (92.0...108.0) V

# Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

# Mounting and assembly dimensions:

Designation

K mm: 3.5...3.8 KF mm: KOT MS1 mm: 0.9...1.3 SVS max. mm: 1.6 Ya mm: 41.4...45.4 Yb mm: 40.2...45.8

### Remarks:

:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Starting delivery check V = Speed-control lever in full-load position BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : MAN
Edition : 01.03.96
replaces : 10.06.94
Calibrating oil : ISO-4113

Injection pump : VE4/12F115OR587 Type number : 0 460 424 105

Customer Part-No. :

Customer-specific information

Customer : MAN

Engine : "DI" 0824 LUE 521

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 110

Opening |

Pressure> bar: 250.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 688 901 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 900 Charge press. hPa: 1000

Setting value mm: 1.80...2.20

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 900 Charge press hPa: 1000

Setting value bar: 6.70...7.30

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 800 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 112.5...113.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 > 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 450

Del. quantity cm3/

> 1000s.: 63.00...64.00

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

> 1000s.: 18.00...22.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 > 1000S.: (6.5)

Full-load speed regulation

Speed 1/min: 1250 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 67.00...73.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100 Charge press hPa: -

Del. quantity cm3/: 90.00...150.00

mind> 1000s.: 90.00

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device chara	cteristic:	+	1nd speed 1/min:	
		+	Charge-air pressure	
2nd speed 1/min:		+	point> hPa:	400
	1000	+	Shutoff	
	2.403.20	+	electromagnet>Volt:	12
> mm:	(2.103.50)	+	Del. quantity cm3/:	99.0100.0
Shutoff		+		(96.0103.0)
electromagnet>Volt:	12	1	2nd speed 1/min:	
3rd speed 1/min:		1	Charge press. hPa:	
	1000	1	Shutoff	1000
	1.802.20	I	electromagnet Volt:	10
> mm:	(1.302.70)	T		
	(1.302.70)	<b>T</b>	Del. quantity cm3/:	
Shutoff	45	+		(0.003.00)
electromagnet>Volt:	12	+	3rd speed 1/min:	
4th speed 1/min:		+	Charge press. hPa:	1000
	1000	+	Shutoff	
	0.801.60	+	electromagnet>Volt:	12
> mm:	(0.501.90)	+	Del. quantity cm3/:	0.0015.00
Shutoff		1		(0.0015.00)
electromagnet>Volt:	12	1	4th speed 1/min:	
Television agricultural television and the televisi	• •	1	Charge press. hPa:	
Supply-pump pressur	e characteristic:	1	Shutoff	1000
outpery bamb by essay	e character istre.	T	electromagnet>Volt:	40
1mt amount 1/min.	/50	T		
1st speed 1/min:		†	Del. quantity cm3/:	
Charge press. hPa:	1000	+		(15.0055.00)
Supply-pump		+	5th speed 1/min:	
pressure> bar:	4.705.30	+	Charge press. hPa:	1000
Shutoff		+	Shutoff	
electromagnet>Voit:	12	+	electromagnet>Volt:	12
2nd speed 1/min:	900	+	Del. quantity cm3/:	
Charge press. hPa:		1		(61.5078.50)
Supply-pump		1	9th speed 1/min:	
pressure> bar:	6.707.30	1	Charge press. hPa:	
Shutoff	3., 3	1	Shutoff	1000
electromagnet>Volt:	12	1	electromagnet>Volt:	12
3rd speed 1/min:		1	Del. quantity cm3/:	
		T		
Charge press. hPa:	1000	Ť		(96.50104.50)
Supply-pump	7.40 7.70	†	10th speed 1/min:	
•	7.107.70	+	Charge press. hPa:	1000
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt:	
		+	Del. quantity cm3/:	102.5107.5
Overlow quantity at	overflow valve:	+	> 1000s.:	(101.0109.0)
		+	12th speed 1/min:	
1st speed 1/min:	450	1	Charge press. hPa:	
Charge press. hPa:		1	Shutoff	
Shutoff		1	electromagnet>Volt:	12
electromagnet>Volt:	12	1	Del. quantity cm3/:	112 50 113 50
	41.7086.10	1	> 1000s.:	(100.50115.50)
quantity> cm3/10s:		T		
		T		
2nd speed 1/min:		Ť	Charge press. hPa:	_
Charge press. hPa:	1000	†	Shutoff	40
Shutoff	40	†	electromagnet>Volt:	
electromagnet>Volt:		+	Del. quantity cm3/:	
	55.60139.00	+		(60.5066.50)
quantity> cm3/10s:	(40.60154.00)	+	20th speed 1/min:	
-		<del>+++++++++++++++++++++++++++++++++++++</del>	Charge press. hPa:	
Delivery-quant. and	breakaway char.:	+	Shutoff	
, , , , , , , , , , , , , , , , , , , ,	•	1	electromagnet>Volt:	12
		1	Del. quantity cm3/:	

1000s.: (114.00...126.00) > Mech. shutoff: Designation K KF 1st speed 1/min: 1150 Charge press. hPa: 1000 MS7 Del. quantity cm3/: 0.00...3.00 > 1000s.: (0.00...3.00) SVS max. Ya KSB/AFB Yh Volt: 12 valve Remarks: Electr. shutoff: 1st speed 1/min: 350 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.60) position Shutoff electromagnet>volt: -Idle delivery: 1/min: 350 1st speed Shutoff position electromagnet>Volt: 12 Del. quantity cm3/: 18.00...22.00 1000s.: (13.50...26.50) > cm3/: 6.0Dispersion 1000s.: (6.5) 2nd speed 1/min: 400 Shutoff electromagnet>Volt: 12 ccm/1000 S. Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: ccm/1000 S. 1/min: 170 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 90.00...150.00 1000s.: -1/min: 220 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.00...90.00 1000s.: -1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 90.00...150.00 1000s.: -Shutoff electromagnet: Cut-in : 10.0 >min voltage

Mounting and assembly dimensions:

mm: 3.6...3.8 mm: 6.2...6.6 mm: 1.0...1.3 mm: 3.2 mm: 41.8...44.8

mm: 38.0...43.8

: MAN - NR.7270

Ya = Distance between VE flange and speed-control lever in idle

Measurement point = edge of control

Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed Measurement point = edge of control

lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0

Permissible port/port scatter with stop test, mechanical = max. 5.0

Pump with slave plunger

Rated voltage

: 12.0

Volt: 12 valve > BOSCH-INJ.-PUMP TEST SPECIFICATIONS Shutoff electromagnet>Volt: 12 Note inst. in remarks column Supply-pump pressure Test scheet : MAN Edition : 29.02.96 1/min: 950 Speed Charge press hPa: 1000 replaces Setting value bar: 6.90...7.50 Calibrating oil : ISO-4113 KSB/AFB Injection pump : VE4/12F1150R609 valve > Volt: 12 Type number : 0 460 424 107 Shutoff Customer Part-No. : electromagnet>Volt: 12 Full-load del. with charge press.: Customer-specific information 1/min: 900 Customer : MAN Speed Charge press. hPa: 1000 Del. quantity cm3/ Engine : D 0824LUE 522 1000s.: 96.5...97.5 KSB/AFB TEST BENCH REQUIREMENTS Volt: 12 valve > Overflow restricti: 1 463 456 303 Shutoff electromagnet>Volt: 12 cm3/: 4.0Calibrating-oil Dispersion return>temp. > °C 1000s.: (4.5) with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Full-load del. w/out charge press.: Inlet press., bar: 0.30...0.40 1/min: 500 Speed Del. quantity cm3/ Calibrating nozzle-holder > 1000s.: 65.5...66.5 : 1 688 901 110 KSB/AFB assembly> valve Volt: 12 Opening | Shutoff bar: 247.00...253.00 Pressure> electromagnet>Volt: 12 Perforated-plate Low-idle speed regulation diameter> mm: 0.5 1/min: 375 Speed Charge press hPa: -Test inj. tubing : 1 680 750 017 Del. quantity cm3/ 1000s.: 16.0...20.0 > Outside diameter : 6.00 KSB/AFB x Wall>thickness : 2.00 Volt: 12 valve > x Length> mm: 840 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6.5) mm: -(from BDC): -Full-load speed regulation

1/min: 1250 Speed hPa: 1000 Charge press Del. quantity cm3/

1000s.: 59.0...65.0 >

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KSB/AFB

> Volt: 12 valve

Shutoff

electromagnet>Volt: 12

Start of delivery Prestroke

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 950 Speed Charge press. hPa: 1000 Setting value mm: 1.7...2.1 AFB/AFB

	+	Charge press. hPa:	1000
Start:	+	Supply-pump pressure> bar:	77 07
Speed 1/min: 100	I	KSB/AFB	7.70.3
Charge press hPa: -	1	valve > Volt:	12
Del. quantity cm3/: 90.00150.00	+	Shutoff	
mind> 1000s.: 90.00	+	electromagnet>Volt:	12
KSB/AFB	+		
Valve > Volt: 12	+	Overlow quantity at	overflow valve:
Shutoff electromagnet>Volt: 12	1	1st speed 1/min:	500
etettrollagretzvott. 12	I	Charge press. hPa:	
Inspection-pump test specifications	1	KSB/AFB	
Test specifications in parentheses	+	valve > Volt:	12
	+	Shutoff	
Timing-device characteristic:	†	electromagnet>Volt:	
1ab annual 1/min. 950	†		41.7086.10
1st speed	T	quantity> cm3/10s: 2nd speed 1/min:	
Charge press hPa: 1000 TD travel	I	Charge press. hPa:	
> mm: (0.31.7)	Ι	KSB/AFB	1000
KSB/AFB	1	valve > Volt:	12
valve > Volt: 12	1	Shutoff	15
electromagnet>Volt: 12	1	electromagnet>Volt:	12
2nd speed 1/min: 950	1	Overflow :	55.60139.00
Charge press hPa: 1000	+	quantity> cm3/10s:	
TD travel mm: 1.72.1	+	•	
> mm: (1.22.6)	+	Delivery-quant. and	breakaway char.:
KSB/AFB	†		
valve > Volt: 12	+	A	500
Shutoff	†	1nd speed 1/min:	
electromagnet>Volt: 12	T	Charge-air pressure- point> hPa:	
3rd speed	T	LDA-stroke mm:	
Charge press hPa: 1000 TD travel mm: 2.303.10	I	KSB/AFB	_
> mm: (2.003.40)	1	valve > Volt:	12
KSB/AFB	+++++++++++++++++++++++++++++++++++++++	Shutoff	
valve > Volt: 12	1	electromagnet>Volt:	12
Shutoff	+	Del. quantity cm3/:	
electromagnet>Volt: 12	+	> 1000s.:	(84.591.5)
	+	2nd speed 1/min:	
Supply-pump pressure characteristic:	†	Charge press. hPa:	1000
1st speed 1/min. 500	†	KSB/AFB	10
1st speed	T	<pre>valve &gt; Volt: Shutoff</pre>	12
Charge press. hPa: 1000 Supply-pump	I	electromagnet Volt:	12
oressure> bar: 4.95.5	1	Del. quantity cm3/:	
SB/AFB	1	> 1000s.:	
valve > Volt: 12	+	3rd speed 1/min:	
Shutoff	+	Charge press. hPa:	1000
electromagnet>Volt: 12	+	KSB/AFB	
2nd speed 1/min: 950	+	valve > Volt:	12
Charge press. hPa: 1000	†	Shutoff	40
Supply-pump	†	electromagnet>Volt:	
pressure> bar: 6.97.5	Ī	Del. quantity cm3/: > 1000s.:	(0.032.0)
KSB/AFB Valve > Volt: 12	I	4th speed 1/min:	
Shutoff	1	Charge press. hPa:	
electromagnet>Volt: 12	1	KSB/AFB	
ord speed 1/min: 1150	1	valve > Volt:	12

Shutoff		+	Shutoff	
electromagnet>Volt:	12	1	electromagnet>volt: 12	
Del. quantity cm3/:		1	KSB/AFB	
> 1000s.:	(53.570.5)	1	valve > Volt: 12	
5th speed 1/min:		1	vacve - voct. 12	
Charge press. hPa:		1	Electr. shutoff:	
KSB/AFB	1000	1	Eccui. Silatori.	
valve > Volt:	12	$\mathbf{I}$	1st speed 1/min: 375	
Shutoff	12	T	Charge press. hPa: -	
	40	T		
electromagnet>Volt:	16 80 5 - 07 5	T	Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)	
Del. quantity cm3/:		T	(000011 (0100111010)	,
	(88.096.0)	Ť	Shutoff	
6th speed 1/min:		Ť	electromagnet>volt: -	
Charge press. hPa:	1000	+	KSB/AFB	
KSB/AFB	40	†	valve > Volt: 12	
<pre>valve &gt; Volt:</pre>	12	†		
Shutoff	•=	+	Idle delivery:	
electromagnet>Volt:	12	+		
Del. quantity cm3/:	96.597.5	+	1st speed 1/min: 375	
	(94.599.5)	+	>KSB/AFB	
7th speed 1/min:	750	+	valve > Volt: 12	
Charge press. hPa:		+	Shutoff	
KSB/AFB		+	electromagnet>Volt: 12	
<pre>valve &gt; Volt:</pre>	12	+	Del. quantity cm3/: 16.020.0	
Shutoff		1	> 1000s.: (11.524.5)	)
electromagnet>Volt:	12	1	Dispersion cm3/: 6.0	
Del. quantity cm3/:	101.0106.0	1	> 10008.: (6.5)	
> 1000s.:	(99.5107.5)	1	2nd speed 1/min: 500	
8th speed 1/min:		1	KSB/AFB	
Charge press. hPa:		1	valve > Volt: 12	
KSB/AFB	1000	$\mathbf{I}$	Shutoff	
valve > Volt:	10	I	electromagnet>Volt: 12	
	12	T	Del. quantity cm3/: 0.003.00	
Shutoff	42	T		
electromagnet>Volt:	00 0 407 0	Ť	> 1000s.: (0.003.00)	
Del. quantity cm3/:	70.UIU/.U	T	Andreada stration for latitude	
	(96.5108.5)	Ť	Automatic starting fuel delivery:	
9th speed 1/min:		Ť	4.1	
Charge press. hPa:	_	†	1st speed 1/min: 170	
KSB/AFB		†	KSB/AFB	
valve > Volt:	12	+	valve > Volt: 12	
Shutoff		+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt: 12	
Del. quantity cm3/:	65.566.5	+	Del. quantity cm3/: 90.00150.0	0
	(63.069.0)	+	> 1000s.: -	
10th speed 1/min:		+		
Charge press. hPa:	1000	+	2nd speed 1/min: 220	
KSB/AFB		+	KSB/AFB	
<pre>valve &gt; Volt:</pre>	12	+	valve > Volt: 12	
Shutoff		+	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt: 12	
Del. quantity cm3/:	96.597.5	1	Dei. quantity cm3/: 30.0090.00	ı
> 1000s.:	(94.599.5)	1	> 1000s.: -	
		1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
		1	4th speed 1/min: 100	
Mech. shutoff:			KSB/AFB	
neon, ondeon.			valve > Volt: 12	
1st speed 1/min:	1150	1	Shutoff	
Charge press. hPa:	1000		electromagnet>Volt: 12	
Del. quantity cm3/:	0.00 3.00		Del. quantity cm3/: 90.00150.0	<u>,</u>
> quantity cms/:	(0.003.00)		> 1000s.: -	Ų
IUUU3. 1	くしょいしょ ょっしょいじん	Т	- 10000	

#### Shutoff electromagnet:

Cut-in

>min voltage : 10.0 Rated voltage : 12.0

## Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8 KF mm: 6.2...6.6 MS1 mm: 1.1...1.4 SVS max. mm: 3.8 FH mm: KSB=7.1MM mm: 42.3...44.3

Remarks:

Yb

:

mm: 38.0...43.8

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

#### Pump with slave plunger

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

electromagnet>Volt: 12 BOSCH-INJ.-PUMP TEST SPECIFICATIONS Supply-pump pressure Note inst. in remarks column 1/min: 900 Speed Test scheet : MAN Charge press hPa: 1000 Setting value bar: 6.70...7.30 Edition : 29.02.96 replaces Shutoff Calibrating oil : ISO-4113 electromagnet>Volt: 12 Injection pump : VE4/12F1150R625 Full-load del. with charge press.: Type number : 0 460 424 112 Customer Part-No. : 1/min: 900 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 84.5...85.5 Customer-specific information Shutoff Customer : MAN electromagnet>Volt: 12 : D 0824LUE 523 cm3/: 4.0 Engine Dispersion 1000s.: (4.5) TEST BENCH REQUIREMENTS Full-load del. w/out charge press.: Overflow restricti: 1 463 456 303 1/min: 450 Calibrating-oil Del. quantity cm3/ return>temp. > °C 1000s.: 73.5...74.5 with>thermometer> : 40.00...48.00 Shutoff Electronically> : 42.00...50.00 electromagnet>Voit: 12 Inlet press., bar: 0.30...0.40 Low-idle speed regulation 1/min: 350 Calibrating nozzle-holder Speed : 1 688 901 110 assembly> Charge press hPa: -Del. quantity cm3/ 1000s.: 13.0...17.0 Opening bar: 247.00...253.00 Shutoff Pressure> electromagnet>Volt: 12 Del. quantity cm3/: 6.0 Perforated-plate 1000s.: (6.5) diameter> mm: 0.5 Full-load speed regulation Test inj. tubing : 1 680 750 017 Speed 1/min: 1250 hPa: 1000 Outside diameter : 6.00 Charge press Del. quantity cm3/ x Wall>thickness : 2.00 mm: 840 1000s.: 53.0...59.0 x Length> Shutoff Start of delivery electromagnet>Volt: 12 Prestroke mm: -(from BDC): -Start: 1/min: 100 Speed Injection-pump setting values Charge press hPa: -Test specifications in parentheses Del. quantity cm3/: 90.00...150.00 1000s.: 90.00 mind> Timing-device travel Shutoff 1/min: 900 electromagnet>Volt: 12 Speed Charge press. hPa: 1000

Inspection-pump test specifications Test specifications in parentheses

Shutoff

Setting value mm: 2.0...2.4

		+	1nd speed 1/min:	450
Timing-device chara	cteristic:	+	Charge-air pressure	-setting
		+	point> hPa:	300
1st speed 1/min:	800	1	LDA-stroke mm:	
Charge press hPa:		1	Shutoff	
TD travel mm:	1.01.8	1	electromagnet>Volt:	12
TD travel mm:	(0.72.1)	1	Del. quantity cm3/:	73 5 74 5
electromagnet>Volt:		1		(70.577.5)
2nd speed 1/min:		1	2nd speed 1/min:	
	1000	<u>T</u>	Charge press. hPa:	
		T		1000
TD travel mm:	(4.5.20)	Ť	Shutoff	40
	(1.52.9)	Ť	electromagnet Volt:	16
Shutoff	45	†	Del. quantity cm3/:	0.003.00
electromagnet>Volt:		+	> 1000s.:	
3rd speed 1/min:		+	3rd speed 1/min:	
	1000	. +	Charge press. hPa:	1000
TD travel mm:		+	Shutoff	
> mm:	(2.303.70)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	0.015.0
electromagnet>Volt:	12	1	> 1000s.:	
		1	4th speed 1/min:	
Supply-pump pressure	a characteristic:	1	Charge press. hPa:	
cappe, pamp pressure	ondi docer rocto.	1	Shutoff	1000
1st speed 1/min:	450	1	electromagnet>Volt:	12
		T		
Charge press. hPa:	1000	T	Del. quantity cm3/:	
Supply-pump	, m = -	†		(47.564.5)
•	4.75.3	†	5th speed 1/min:	
Shutoff	•-	+	Charge press. hPa:	1000
electromagnet>Volt:		+	Shutoff	
2nd speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1000	+	Del. quantity cm3/:	65.085.0
Supply-pump		+	> 1000s.:	_
	6.77.3	1	6th speed 1/min:	
Shutoff		4	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	, 555
3rd speed 1/min:	1150	1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
	1000	T		(78.586.5)
Supply-pump	77 07	T		
	7.78.3	Ť	7th speed 1/min:	
Shutoff		+	Charge press. hPa:	1000
electromagnet>Volt:	12	†	Shutoff	
		+	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	82.087.0
		+		(80.588.5)
1st speed 1/min:	500	+	8th speed 1/min:	450
Charge press. hPa:		+	Charge press. hPa:	1000
Shutoff		1	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt:	12
Overflow :	41 70 86 10	1	Del. quantity cm3/:	
quantity> cm3/10s:		1		(76.588.5)
2nd speed 1/min:		$\mathbf{I}$	9th speed 1/min:	
		7	Charge press. hPa:	
Charge press. hPa:	1000	T		_
Shutoff	10	<b>†</b>	Shutoff	40
electromagnet>Volt:		t	electromagnet>Volt:	
	55.60139.00	+	Del. quantity cm3/:	
quantity> cm3/10s:	(40.60154.00)	+		(57.563.5)
		+	10th speed 1/min:	
Delivery-quant. and	breakaway char.:	+	Charge press. hPa:	1000
- ,	-	+	Shutoff	
		1	electromagnet>Volt.	12

Del. quantity cm3/: 84.5...85.5 >min voltage : 10.0 1000s.: (82.5...87.5) Rated voltage : 12.0 Mounting and assembly dimensions: Mech. shutoff: Designation 1st speed 1/min: 1150 mm: 3.6...3.8 K Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 mm: 6.2...6.6 KF MS1 mm: 1.1...1.4 1000s.: (0.00...3.00) SVS max. mm: 2.7 FH mm: KSB=7.1MM mm: 41.8...44.8 electromagnet>volt: 12 Ya mm: 38.1...43.9 Yb Electr. shutoff: Remarks: 1/min: 350 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 Ya = Distance between VE flange and 1000s.: (0.00...3.00) speed-control lever in idle Shutoff noitisoa electromagnet>volt: -Measurement point = edge of control lever on drive end Idle delivery: 1/min: 350 1st speed Yb = Distance between VE flange and speed-control lever in rated speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.0...17.0 Measurement point = edge of control 1000s.: (8.5...21.5) cm3/: 6.0 lever on distributor-head end Dispersion 1000s.: (6.5) 1/min: 420 2nd speed Shutoff electromagnet>Volt: 12 Pump with slave plunger Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Permissible port/port scatter with Automatic starting fuel delivery: stop test, electrical = max. 5.0 ccm/1000 S. 1st speed 1/min: 150 Shutoff Permissible port/port scatter with stop test, electrical = max. 5.0 electromagnet>Volt: 12 Del. quantity cm3/: 95.00...155.00 ccm/1000 S. 1000s.: -1/min: 220 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.00...90.00 1000s.: -1/min: 100 4th speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 90.00...150.00 1000s.: -Shutoff electromagnet: Cut-in

K06

Note inst. in remarks column

Test scheet : CASE Edition : 25.03.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F12OOR645 Type number : 0 460 424 120 Customer Part-No. : 191 963 A1

Customer-specific information

Customer : CASE

Engine : DT 268/4240

Power KW: 74

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 020

Opening |

Pressure> bar: 169.00...175.00

Perforated-plate

diameter> mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 
> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 800 Setting value mm: 2.2...2.6 Supply-pump pressure

Speed 1/min: 800

Setting value bar: 5.80...6.40

Full-load del. w/out charge press.:

Speed 1/min: 800

Del. quantity_cm3/

> 1000s.: 103.5...104.5

Dispersion cm3/: 3.5 > 1000s.: (4.0)

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

> 1000s.: 18.0...22.0

Del. quantity cm3/: 3.0 > 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1265

Del. quantity cm3/

> 1000s.: 73.0...77.0

Start:

Speed 1/min: 100

Del. quantity cm3/: 110.0...160.0

mind> 1000s.: 110.0

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

> mm: (0.4...1.8)

2nd speed 1/min: 800

TD travel mm: 2.2...2.6 mm: (1.7...3.1)

3rd speed 1/min: 1050

TD travel mm: 4.10...4.90

> mm: (3.80...5.20)

Supply-pump pressure characteristic:

1st speed 1/min: 500

amua-ylaau2

pressure> bar: 4.4...5.0

2nd speed 1/min: 800

Supply-pump

pressure> bar: 5.8...6.4

3rd speed 1/min: 1050

Supply-pump

pressure> bar: 6.8...7.4

Overlow quantity at overflow valve:	†
1st speed	+ Cut-in + >min voltage : 10.0 + Rated voltage : 12.0
quantity> cm3/10s: (25.296.4) 2nd speed	† Mounting and assembly dimensions:
Overflow : 41.6125.0 quantity> cm3/10s: (26.6140.0)	† Designation + K mm: 3.63.8
Delivery-quant. and breakaway char.:	+ KF mm: - + MS1 mm: 1.31.6
1nd speed	+ SVS max. mm: 2.4 + Ya mm: 36.240.2 + Yb mm: 53.261.2
2nd speed 1/min: 1300 Del. quantity cm3/: 28.058.0	Remarks:
> 1000s.: - 3rd speed 1/min: 1265 Del. quantity cm3/: 73.077.0 > 1000s.: (67.083.0) 4th speed 1/min: 1150 Del. quantity cm3/: 105.0108.5 > 1000s.: (100.0110.0) 5th speed 1/min: 800 Del. quantity cm3/: 103.5104.5	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end  Yb = Distance between VE flange and
> 1000s.: (101.5106.5) 6th speed 1/min: 500 Del. quantity cm3/: 84.091.0 > 1000s.: (82.592.5)	speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end
1000011 (02.511.72.57)	tover on a root today that
Mech. shutoff:	
	† † † † † † † † † † † † † † † † † † †
Mech. shutoff:  1st speed 1/min: 1200 Del. quantity cm3/: 0.03.0	
Mech. shutoff:  1st speed 1/min: 1200  Del. quantity cm3/: 0.03.0  > 1000s.: -	
Mech. shutoff:  1st speed 1/min: 1200 Del. quantity cm3/: 0.03.0 > 1000s.: -  Idle delivery:  1st speed 1/min: 375 Del. quantity cm3/: 18.022.0 > 1000s.: (15.524.5) Dispersion cm3/: 3.0 > 1000s.: (3.5) 2nd speed 1/min: 450 Del. quantity cm3/: 0.003.00	
Mech. shutoff:  1st speed	
Mech. shutoff:  1st speed 1/min: 1200 Del. quantity cm3/: 0.03.0 > 1000s.: -  Idle delivery:  1st speed 1/min: 375 Del. quantity cm3/: 18.022.0 > 1000s.: (15.524.5) Dispersion cm3/: 3.0 > 1000s.: (3.5) 2nd speed 1/min: 450 Del. quantity cm3/: 0.003.00 > 1000s.: -  Automatic starting fuel delivery:  1st speed 1/min: 220 Del. quantity cm3/: 67.087.0	

Note inst. in remarks column

Test scheet : CDC Edition : 25.03.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1400R646 Type number : 0 460 424 121 Customer Part-No.: 3 282 812

Customer-specific information

: CDC Customer

Engine : 4 BTAA 3.9

KW: 97 Power 1/min: 2800 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Opening |

bar: 247.00...253.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

Prestroke mm: 0.3

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.95 Outlet > : A

Injection-pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 950 Charge press. hPa: 1000

Setting value mm: 1.5...1.9

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

1/min: 950 Speed

Charge press hPa: 1000 Setting value bar: 5.90...6.50

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

1/min: 750 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 76.5...77.5

Shutoff

electromagnet>Volt: 24 cm3/: 4.0 Dispersion 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 550 Speed Del. quantity cm3/

> 1000s.: 44.5...45.5

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/

1000s.: 7.5...9.5 >

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

1/min: 1500 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 42.0...48.0

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 75.0...145.0

mind> 1000s.: 75.0

Shutoff

electromagnet>Volt:	24	‡	point> Shutoff	hPa:	500
Inspection-pump tes	t specifications	1	electromagnet>\	Volt:	24
Test specifications		1	Del. quantity		
rece open record	,,, pa. 6.10.10000	1			(58.067.0)
Timing-device chara	otenistis:	-1			1625
riming-device chara	cteristic:	T			
	050	†	Charge press.	nra:	1000
1st speed 1/min:		+	Shutoff		
Charge press hPa:		+	electromagnet \		
TD travel mm:	1.51.9	+	Del. quantity of	:/Em	0.003.00
> mm:	(1.02.4)	+	> 100	00s.:	-
electromagnet>Volt:	24	1	3rd speed 1/	min:	1550
2nd speed 1/min:	1100	1	Charge press.		
	1000	1	Shutoff	.,,	1000
	2.23.0	1		101+•	24
		T	electromagnet>\		
	(1.93.3)	†	Del. quantity o		
Shutoff		+		00s.:	
electromagnet>Volt:	24	+	4th speed 1/		
		+	Charge press.	hPa:	1000
Supply-pump pressure	e characteristic:	1	Shutoff		
a coloto a de consta de caracterio		1	electromagnet>\	/olt:	24
1st speed 1/min:	550	1	Del. quantity of		
		T			(39.051.0)
Charge press. hPa:	1000	T			
Supply-pump		Ť	5th speed 1/		
	4.04.6	+	Charge press.	hPa:	7000
Shutoff		+	Shutoff		
electromagnet>Volt:	24	+	electromagnet>V		
2nd speed 1/min:	950	+	Del. quantity o	:/Sm	68.571.5
Charge press. hPa:	1000	1			(66.573.5)
Supply-pump	1000	1	6th speed 1/		
	5.96.5	1	Charge press.		
	3.70.3	T		III Q.	1000
Shutoff	21	Ť	Shutoff	1	21
electromagnet>Volt:	24	+	electromagnet>V		
3rd speed 1/min:		+	Del. quantity o	m3/:	76.577.5
Charge press. hPa:	1000	+			(73.580.5)
Supply-pump		+	7th speed 1/	min:	550
pressure> bar:	7.88.4	+	Charge press.	hPa:	-
Shutoff		1	Shutoff		
electromagnet>Volt:	24	1	electromagnet>V	/ol+•	24
ecces onagrices vocc.	<b>C</b> 7	1	Del. quantity c	m3/.	44.5 45.5
A	aventino values	T	> quality 0	100	(41.049.0)
Overlow quantity at	overstow valve:	T	/ 100	103	(41.049.0)
	500	Ť			
1st speed 1/min:		†			
Charge press. hPa:	-	+	Mech. shutoff:		
Shutoff		+			
electromagnet>Volt:	24	+	1st speed 1/	min:	1400
Overflow :	33.377.7	+	Charge press.	hPa:	1000
quantity> cm3/10s:		1	Del. quantity c	m3/:	0.03.0
2nd speed 1/min:	1/00	1	> 100	Os.:	-
Charge proce book	1000	1	Shutoff		
Charge press. hPa:	1000	T		-14	2/.
Shutoff	21	T	electromagnet>v	טננ:	<b>64</b>
electromagnet>Volt:		†			
	50.0105.5	+	Electr. shutoff	:	
quantity> cm3/10s:	(35.0120.5)	+			
•		+	1st speed 1/	min:	400
Delivery-quant. and	breakaway char.:	+	Charge press.		
courter and	a. cananay enamer	1	Del. quantity c		
		1		0s.:	
And amond Alman	700	Ι	Shutoff	JU.,	
1nd speed 1/min:		T		- ـ ا ـ	_
Charge-air pressure-	secting	Ť	electromagnet>v	OLT:	_

## Idle delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 7.5...9.5 1000s.: (3.0...14.0) cm3/: 5.5 Dispersion > 1000s.: (7.0) 1/min: 450 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...4.00 1000s.: -Automatic starting fuel delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 40.0...90.0 1000s.: -1/min: 230 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 75.00...125.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: -K KF mm: -MS1 mm: 1.3...1.6 Ya mm: 34.8...38.8 Yb mm: 41.8...47.2 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed

Measurement point = edge of control

Lever on distributor-head end

Note inst. in remarks column

Test scheet : MAN Edition : 25.03.96

replaces :-

Calibrating oil : ISO-4113

Injection pump : VE4/12F120DR636-1
Type number : 0 460 424 123

Customer Part-No. :

Customer-specific information

Customer

: MAN

Engine

: D 0824 LFL 05

Power

KW: 114

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 110

Opening

Pressure> bar: 247.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 900 Charge press. hPa: 1500 Setting value mm: 1.9...2.3

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 900 Charge press hPa: 1500

Setting value bar: 7.00...7.60

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 1000 Charge press. hPa: 1500

Del. quantity cm3/

> 1000s.: 109.5...110.5

Shutoff

electromagnet>Volt: 24 Dispersion cm3/: 4.0 > 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 62.0...63.0

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 12.5...16.5

Shutoff

electromagnet>Volt: 24
Del. quantity cm3/: 6.0
> 1000s.: (6.5)

Full-load speed regulation

Speed 1/min: 1340 Charge press hPa: 1500

Del. quantity cm3/

> 1000s.: 73.0...77.0

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100

Del. quantity cm3/: 90.0...130.0

mind> 1000s.: 90.0

Shutoff

electromagnet>Volt: 24

Inspection-pump test specifications Test specifications in parentheses

		+		55.5758.8
Timing-device chara	cteristic:	+	quantity> cm3/10s:	(40.5153.8)
1st speed 1/min:	800	T	Dolivon-guant and	hankauny ahan
Charge press hPa:		T	Delivery-quant. and	Dieakaway Char.
The travel	0 4 1 /	T		
TD travel mm:	(0.31.7)	Ť	1-4 1/	EEO
		T	1nd speed 1/min:	
electromagnet>Volt:		†	Charge-air pressure	
2nd speed 1/min:		+	point> hPa:	
Charge press hPa:	1500	+		7.8
	1.92.3	+	Shutoff	
> mm:	(1.42.8)	+	electromagnet>Volt:	
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	24	+		(96.0102.0)
3rd speed 1/min:	1050	+	2nd speed 1/min:	1470
Charge press hPa:	1500	+	Charge press. hPa:	1500
TD travel mm:	3.54.3	+	Shutoff	
> mm:	(3.24.6)	+	electromagnet Volt:	24
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	24	1	> 1000s.:	_
4th speed 1/min:	1200	1	3rd speed 1/min:	
	1500	1	Charge press. hPa:	
TD travel mm:		1	Shutoff	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
> nm:	-	1	electromagnet>Volt:	24
Shutoff		1	Del. quantity cm3/:	
electromagnet>Volt:	24	Ι	> 1000s.:	-
etectromagnet/vott.	24	T	4th speed 1/min:	
Summing management	a abamastanistia.	T		
Supply-pump pressur	e characteristic:	T	Charge press. hPa:	1500
A	550	†	Shutoff	21
1st speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1500	†	Del. quantity cm3/:	
Supply-pump .		+	> 1000s.:	
•	5.25.8	+	5th speed 1/min:	
Shutoff		+	Charge press. hPa:	1500
electromagnet>Volt:		+	Shutoff	
2nd speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1500	+	Del. quantity cm3/:	
Supply-pump		+		(67.083.0)
pressure> bar:	7.07.6	+	6th speed 1/min:	1200
Shutoff		+	Charge press. hPa:	1500
<pre>electromagnet&gt;Volt:</pre>	24	+	Shutoff	
3rd speed 1/min:	1200	+	electromagnet>Volt:	24
Charge press. hPa:		+	Del. quantity cm3/:	102.5107.5
Supply-pump		1	> 1000s.:	(101.0109.0)
pressure> bar:	8.69.2	+	7th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	24	1	Shutoff	.505
eccet omagnet vocas	<b>L</b> T	1	electromagnet>Volt:	24
Overlow quantity at	overflow valve:	1	Del. quantity cm3/:	
overtow qualitity at	over tow varve.	Ι	> 1000s.:	(107.5112.5)
1st speed 1/min:	500	I	8th speed 1/min:	
		T		
Charge press. hPa:		T	Charge press. hPa:	1000
Shutoff	24	T	Shutoff	2/.
electromagnet>Volt:		T	electromagnet>Volt:	
	41.786.1	T	Del. quantity cm3/:	
quantity> cm3/10s:	(20.7101.1)	†		(113.0121.0)
2nd speed 1/min:		†	9th speed 1/min:	
Charge press. hPa:	1500	†	Charge press. hPa:	1500
Shutoff		+	Shutoff	
electromagnet>Volt:	24	+	electromagnet>Volt:	24

Del. quantity cm3/: 117.0...126.0 > 1000s.: (115.5...127.5) 1/min: 550 10th speed Charge press. hPa: -Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 62.0...63.0 1000s.: (59.5...65.5) Electr. shutoff: 1/min: 400 1st speed Charge press. hPa: -Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: -Idle delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 12.5...16.5 > 1000s.: (9.5...19.5) Dispersion cm3/: 6.0 1000s.: (6.5) 1/min: 500 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: -Automatic starting fuel delivery: 1/min: 250 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 10.0...50.0 1000s.: -1/min: 150 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 80.00...140.0 1000s .: -Shutoff electromagnet: Cut-in : 10.0 >min voltage : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.6...3.8

mm: -

MS mm: 1.1...1.4 LDA stroke mm: 7.8 Ya mm: 37.4...40.4 Yb mm: 41.9...47.1

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

KF

Note inst. in remarks column

Test scheet : SOFIM Edition : 25.03.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F1800R657 Type number : 0 460 424 124

Customer Part-No. :

Customer—specific information Customer : IVECO SOFIM

Engine : 8140.23.3700

Power KW: 77

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 027

**Opening** 

Pressure> bar: 247.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1100 Charge press. hPa: 1200 Setting value mm: 0.7...0.9 Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1100 Charge press hPa: 1200

Setting value bar: 6.50...7.10

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1100 Charge press. hPa: 1200

Del. quantity cm3/

> 1000s.: 57.0...58.0

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 > 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 28.0...29.0

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

> 1000s.: 6.00...10.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 > 1000s.: (6.5)

Full-load speed regulation

Speed 1/min: 2000 Charge press hPa: 1200

Del. quantity cm3/

> 1000s.: 40.0...46.0

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 55.0...100.0

mind> 1000s.: 55.0

Shutoff

electromagnet>Volt: 12

Inspection—pump test specifications Test specifications in parentheses

Timing-device chara	cteristic:	+	Charge-air pressure	
		+		: 500
1st speed 1/min:	1100	+	LDA-stroke mm:	6.7
Charge press hPa:	1200	+	Shutoff	
TD travel mm:	0.70.9	+	electromagnet>Volt:	: 12
> mm:	(0.11.5)	1	Del. quantity cm3/:	45.546.5
electromagnet>Volt:		1	> 10005	(42.549.5)
2nd speed 1/min:	1400	1	2nd speed 1/min:	2200
	1200	7	Change proces hose	1200
		T	Charge press. hPa:	1200
	2.53.3	Ť	Shutoff	40
	(2.23.6)	+	electromagnet Volt:	
Shutoff		+	Del. quantity cm3/:	0.004.00
electromagnet>Volt:		+	> 1000s.:	
3rd speed 1/min:		+	3rd speed 1/min:	
Charge press hPa:	1200	+	Charge press. hPa:	1200
	4.605.20	+	Shutoff	
	(4.205.60)	1	electromagnet>Volt:	12
Shutoff	(11201112100)	1	Del. quantity cm3/:	16.0. 26.0
electromagnet>Volt:	12	1		(14.028.0)
etectionagnet/vott.	12	T	4th speed 1/min:	
S		T		
Supply-pump pressure	e characteristic:	<b>†</b>	Charge press. hPa:	1200
		†	Shutoff	
1st speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1200	+	Del. quantity cm3/:	
Supply-pump		+		(38.547.5)
	4.04.6	+	5th speed 1/min:	1800
Shutoff		+	Charge press. hPa:	1200
electromagnet>Volt:	12	1	Shutoff	
2nd speed 1/min:	1100	1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	58.0 42.0
	1200	$-\mathbf{I}$		(56.563.5)
Supply-pump	45 74	T		
• .	6.57.1	<b>T</b>	6th speed 1/min:	
Shutoff	40	+	Charge press. hPa:	1200
electromagnet>Volt:		+	Shutoff	
3rd speed 1/min:		+	electromagnet>Volt:	12
Charge press. hPa:	1200	+	Del. quantity cm3/:	56.563.5
Supply-pump		+	> 1000s.:	-
	9.09.6	+	7th speed 1/min:	1100
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	
		1	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	1	Del. quantity cm3/:	37 5 44 5
over tow quarterty at	over tow vacve.	T	> 1000S.:	
1-+ 1/	700	7		
1st speed 1/min:		T		
Charge press. hPa:	1200	Ť	Charge press. hPa:	1200
Shutoff		+	Shutoff	4.5
electromagnet>Volt:		+	electromagnet>Volt:	
	75.0119.4	+	Del. quantity cm3/:	
quantity> cm3/10s:	(60.0134.4)	+		(54.061.0)
2nd speed 1/min:	1800	+	9th speed 1/min:	550
Charge press. hPa:		1	Charge press. hPa:	
Shutoff		+	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt:	12
Overflow :	97.2180.5	1	Del. quantity cm3/:	
		T		(25.032.0)
quantity> cm3/10s:	(06.6,(73.3)	T	/ 10005.:	(23.032.0)
Authorization and the second	handlerier show s	T		
Delivery-quant. and	preakaway cnar.:	†		
		†	<b>-</b> 1	
		+	Electr. shutoff:	
1nd speed 1/min:	750	+		

1st speed 1/min: 350 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 6.0...10.0 1000s.: (4.0...12.0) cm3/: 6.0Dispersion > 1000s.: (6.5) 1/min: 425 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -1/min: 320 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.00...18.0 1000s.: (7.00...19.0) Automatic starting fuel delivery: 1/min: 510 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.0...32.0 1000s.: -1/min: 200 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 75.0...105 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.5...3.7 K KF mm: mm: 1.3...1.6 MS1 mm: 6.7 LDA stroke mm: 33.0...35.0 Ya mm: 44.0...50.0 Yb Remarks: Ya = Distance between VE flange and

speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : SOFIM Test scheet : 25.03.96 Edition replaces Calibratina oil : ISO-4113

Injection pump : VE4/12F1800R660 Type number : 0 460 424 125

Customer Part-No. :

Customer-specific information Customer : IVECO SOFIM

: 8140.43.3700 Engine

KW: 86 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return>temp. > °C

with>thermometer> : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Opening

bar: 247.00...253.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length>

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed Charge press. hPa: 1200 mm: 1.5...1.7 Setting value

Shutoff electromagnet>Volt: 12

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1200

Setting value bar: 6.70...7.30

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1200 Del. quantity cm3/

1000s.: 62.5...63.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

1000s.: 33.5...34.5

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

1000s.: 5.00...9.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 2000 Speed hPa: 1200 Charge press

Del. quantity cm3/

1000s.: 40.0...46.0

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 60.0...90.0

1000s.: 60.0 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

	Timing-device chara	cteristic:	+	Charge-air pressure	-setting
	-		+		500
	1st speed 1/min:	1100	+	LDA-stroke mm:	7.0
	Charge press hPa:		1	Shutoff	
		1.51.7	1	electromagnet>Volt:	12
		(0.92.3)	1	Del. quantity cm3/:	
	electromagnet>Volt:		1		(50.557.5)
	2nd speed 1/min:	1400	1	2nd speed 1/min:	
		1200	$\mathbf{I}$	Charge press. hPa:	
	Th +revel mm.	2.53.3	I	Shutoff	1200
		(2.13.5)	T	electromagnet Volt:	12
		(2.1).)	T		
	Shutoff	40	Ť	Del. quantity cm3/:	
	electromagnet>Volt:		T	> 1000s.:	
	3rd speed 1/min:		+	3rd speed 1/min:	
	Charge press hPa:	1200	+	Charge press. hPa:	1200
		3.504.10	. 🕇	Shutoff	
		(3.104.50)	+	electromagnet>Volt:	12
	Shutoff		+	Del. quantity cm3/:	16.026.0
	electromagnet>Volt:	12	+		(14.028.0)
			+	4th speed 1/min:	2000
	Supply-pump pressure	e characteristic:	+	Charge press. hPa:	1200
			+	Shutoff	
	1st speed 1/min:	600	+	electromagnet>Volt:	12
	Charge press. hPa:		1	Del. quantity cm3/:	
	Supply-pump		1	> 1000s.:	(38.547.5)
		5.15.7	1	5th speed 1/min:	
	Shutoff	3.11.1.21.	1	Charge press. hPa:	
	electromagnet>Volt:	12	1	Shutoff	1200
	2nd speed 1/min:		T	electromagnet>Volt:	10
	•		T		
	<b>—</b> ,	1200	T	Del. quantity cm3/:	
	Subbra-brumb	/ 7 7 7	†		(59.566.5)
	•	6.77.3	†	6th speed 1/min:	
	Shutoff		+	Charge press. hPa:	1200
	electromagnet>Volt:		+	Shutoff	
	3rd speed 1/min:		+	electromagnet>Volt:	
	Charge press. hPa:	1200	+	Del. quantity cm3/:	59.564.5
	Supply-pump		+	> 1000s.:	
	pressure> bar:	8.59.1	+	7th speed 1/min:	1750
	Shutoff		+	Charge press. hPa:	1200
	electromagnet>Volt:	12	+	Shutoff	
			+	electromagnet>Volt:	12
	Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	
	over ten quarrete, and		1		(59.566.5)
	1st speed 1/min:	600	1	8th speed 1/min:	
	Charge press. hPa:		1	Charge press. hPa:	
	Shutoff	1200	1	Shutoff	1200
	electromagnet>Volt:	12	1	electromagnet>Volt:	12
		75.0119.4	I	Del. quantity cm3/:	
			T	> 1000s.:	
	quantity> cm3/10s:		T		
	2nd speed 1/min:		+	9th speed 1/min:	
	Charge press. hPa:	1200	+	Charge press. hPa:	1200
	Shutoff	40	†	Shutoff	40
	electromagnet>Volt:	72	+	electromagnet>Volt:	
		97.2180.5	+	Del. quantity cm3/:	65.069.0
1	quantity> cm3/10s:	(82.2195.5)	+		(61.572.5)
			+	10th speed 1/min:	55 <b>0</b>
1	Delivery-quant. and	breakaway char.:	+++++++++++++++++++++++++++++++++++++++	Charge press. hPa:	-
	• •	-	+	Shutoff	
			+	electromagnet>Volt:	12
	1nd speed 1/min:	800	+	Del. quantity cm3/:	
			•	•	

1000s.: (30.5...37.5) > Electr. shutoff: 1/min: 325 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 375 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.0...9.0 > 1000s.: (3.0...11.0) cm3/: 6.0 Dispersion 1000s.: (6.5) 1/min: 425 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.0...3.0 1000s.: -1/min: 275 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 34.0...50.0 1000s.: -Automatic starting fuel delivery: 1/min: 500 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 29.0...35.0 1000s.: -1/min: 200 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 75.0...105.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation K mm: 3.5...3.7 KF mm: mm: 1.4...1.7 MS1 LDA stroke mm: 7.0 FH mm: KSB 5.7MM

Ya mm: 33.0...35.0 Yb mm: 44.0...50.0

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : CDC Edition : 14.03.96 replaces : ISO-4113 Calibrating oil : VE4/12F1300R661 Injection pump Type number : 0 460 424 126 Customer Part-No. : Customer-specific information Customer : CUMMINS Engine : 4 BT F4000-EUR01 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 109 assembly> Openina bar: 204.00...210.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length> Start of delivery Prestroke mm: -(from BDC): -Start of delivery block

Piston stroke mm: 1.2 Outlet > : A Injection—pump setting values Test specifications in parentheses Timing-device travel

1/min: 1250 Speed Charge press. hPa: 1200 Setting value mm: 2.5...2.7 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1250 Speed Charge press hPa: 1200 Setting value bar: 7.20...7.80 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 800 Charge press. hPa: 1200 Del. quantity cm3/ 1000s.: 96.0...97.0 Shutoff electromagnet>Volt: 12 cm3/: 5.0 Dispersion 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 55.5...57.5 > Shutoff electromagnet>Volt: 12 cm3/: 5.0 Dispersion 1000s.: (6.0) Low-idle speed regulation 1/min: 380 Speed Del. quantity cm3/ 1000s.: 13.0...17.0 > Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0) Full-load speed regulation 1/min: 1500 Speed Charge press hPa: 1200 Del. quantity cm3/ 1000s.: 61.0...67.0 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Del. quantity cm3/: 125.0...175.0 1000s.: 125.0 mind>

Shutoff

electromagnet>Volt:	12	‡	1st speed 1/min: Charge press. hPa:	
Inspection-pump tes	t specifications	1	Shutoff	
Test specifications		1	electromagnet>Volt:	12
	The partition of the pa	1	Overflow :	
Timing-device chara	cteristic:	1	quantity> cm3/10s:	
		1	2nd speed 1/min:	
1st speed 1/min:	700	1	Charge press. hPa:	
Charge press hPa:		1	Shutoff	. 200
TD travel mm:	2.3 33	1	electromagnet>Volt:	12
> mm:	(2.13.5)	1	Overflow :	
electromagnet>Volt:		Ι	quantity> cm3/10s:	
2nd speed 1/min:	1050	T	quarterey clips tos.	(20.0140.0)
	1200	T	Dolaway and	brooksysy shor
		T	Delivery-quant. and	breakaway char.
TD travel mm:	U.7(.)	<b>T</b>		
	(0.61.8)	Ť	Audinoral Ato	700
Shutoff	40	†	1nd speed 1/min:	
electromagnet>Volt:	12	+	Charge-air pressure	
3rd speed 1/min:		+	point> hPa:	
Charge press hPa:	1200	+	LDA-stroke mm:	-
TD travel mm:		+	Shutoff	
> mm:	(2.103.10)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	83.084.0
electromagnet>Volt:	12	+		(79.587.5)
4th speed 1/min:		1	2nd speed 1/min:	
Charge press hPa:		1	Charge press. hPa:	
TD travel mm:	30 36	1	Shutoff	1200
	(2.73.9)	1	electromagnet Volt:	12
Shutoff	(2.73.77	I	Del. quantity cm3/:	
	10	T	> 1000s.:	
electromagnet>Volt:	16	T		
<b></b>		†	3rd speed 1/min:	
Supply-pump pressur	e characteristic:	†	Charge press. hPa:	1200
	400	†	Shutoff	40
1st speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1200	+	Del. quantity cm3/:	
Supply-pump		+		(17.047.0)
	4.04.6	+	4th speed 1/min:	
Shutoff		+	Charge press. hPa:	1200
electromagnet>Volt:	12	+	Shutoff	
2nd speed 1/min:		+	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	61.067.0
Supply-pump		1	> 1000s.:	(58.070.0)
	6.26.8	1	5th speed 1/min:	
Shutoff	0.20.0	1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	1200
3rd speed 1/min:		T	electromagnet>Volt:	12
•		T	Del. quantity cm3/:	
	1200	T		
Supply-pump	70 70	†		(88.096.0)
	7.27.8	†	6th speed 1/min:	
Shutoff		†	Charge press. hPa:	1200
electromagnet>Volt:		+	Shutoff	
4th speed 1/min:		+	electromagnet>Volt:	
Charge press. hPa:	1200	+	Del. quantity cm3/:	
Supply-pump		+		(90.598.5)
oressure> bar:	7.98.5	+	7th speed 1/min:	
Shutoff		+	Charge press. hPa:	
electromagnet>Volt:	12	+	Shutoff	<del></del>
2020	<del></del>	1	electromagnet>Volt:	12
Overlow quantity at	overflow valve.	1	Del. quantity cm3/:	
to ton qualities at	CTOLLOW FULLOR	1		(93.599.5)

1/min: 500 8th speed Charge press. hPa: -Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.5...57.5 10008.: (51.5...60.5) Mech. shutoff: 1/min: 1300 1st speed Charge press. hPa: 1200 Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: 12 Electr. shutoff: 1/min: 400 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 380 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.0...17.0 1000s.: (10.0...20.0) cm3/: 7.0 Dispersion 1000s.: (7.0) 1/min: 480 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: -1/min: 250 3rd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 35.0...45.0 1000s.: (34.0...46.0) Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 45.0...75.0 1000s.: -Shutoff electromagnet:

: 10.0

: 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8 mm: 1.4...1.7 Ya mm: 35.0...39.0 Yb mm: 41.9...47.1

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

:

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Cut-in

>min voltage

Rated voltage

Note inst. in remarks column

Test scheet : MAXION Edition : 22,03,96

replaces

Calibrating oil : ISO-4113

Injection pump : VF4/12F1400R664 : 0 460 424 127 Type number

Customer Part-No. :

Customer-specific information : MAXTON Customer

Engine : S4 EURO 1

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly>

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Lenath>

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1240 Setting value mm: 1.8...2.0

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1240

Setting value bar: 7.70...8.30

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 850 Speed

Del. quantity cm3/

1000s.: 69.5...70.5

Shutoff

electromagnet>Volt: 12 cm3/: 4.0 Dispersion 1000s.: (4.5) >

Low-idle speed regulation

1/min: 380 Speed Del. quantity cm3/

10008.: 13.0...17.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (5.0)

Full-load speed regulation

1/min: 1550 Speed

Del. quantity cm3/

1000s.: 39.0...45.0

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 100.0...140.00

mind> 1000s.: 100.0

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1120 1st speed

mm: 0.9...1.5 TD travel

mm: (0.6...1.8)

electromagnet>Volt: 12 2nd speed 1/min: 1240

TD travel mm: 1.8...2.0 mm: (1.4...2.4)

mm: 1.80...2.40

Shutoff

electromagnet>Volt: 12 1/min: 1400 3rd speed

TD travel

K24

> mm:	(1.502.70)	+	electromagnet>Volt	: 12
Shutoff		+	Del. quantity cm3/	: 65.569.5
electromagnet>Volt:	12	+	> 1000s.	: (64.071.0)
•		1	5th speed 1/min	
Supply-pump pressur	e characteristic:	1	Shutoff	
cather? frame [2, 2227.		1	electromagnet>Volt	• 12
1st speed 1/min:	500	1	Del. quantity cm3/	. 60 5 70 5
Supply-pump	300	T	> 1000s.	: (67.073.0)
20bb chamb	/ 7 / 0	T		
	4.34.9	T	6th speed 1/min	: 500
Shutoff	4-	†	Shutoff	
electromagnet>Volt:			electromagnet>Volt	
2nd speed 1/min:	1120	+	Del. quantity cm3/	
Supply-pump		+	> 1000s.	: (58.068.0)
pressure> bar:	7.27.8	+		
Shutoff		+		
electromagnet>Volt:	12	1		
3rd speed 1/min:		1	Electr. shutoff:	
Supply-pump	12-10	1	Eccer. Shatorr.	
pressure> bar:	77 97	T	1st speed 1/min	. 775
	7.70.3			
Shutoff	40	†	Del. quantity cm3/	
electromagnet>Volt:		†		(0.003.00)
4th speed 1/min:	7400	1	Shutoff	
Supply-pump		+	electromagnet>volt:	: -
pressure> bar:	8.59.1	+		
Shutoff		+	Idle delivery:	
electromagnet>Volt:	12	+	•	
		1	1st speed 1/min:	380
Overlow quantity at	overflow valve:		Shutoff	
over tow quarterty at	over from varve.			. 10
1	EOO	T	electromagnet>Volt:	. 12 0 17 0
1st speed 1/min:	300		Del. quantity cm3/:	(13.0
Shutoff	•			: (11.019.0)
electromagnet>Volt:		+	Dispersion cm3/:	
Overflow :		ŧ	> 1000s.:	
quantity> cm3/10s:		+	2nd speed 1/min:	: 300
2nd speed 1/min:	1350	+	Shutoff	
Shutoff		<b>-</b>	electromagnet>Volt:	: 12
electromagnet>Volt:	12		Del. quantity cm3/:	
Overflow :	41 6. 125 0		> 1000s.:	(43.055.0)
quantity> cm3/10s:		-	3rd speed 1/min:	
quarterty/ ciiis/ tos.	(20.0140.0)		Shutoff	. 400
Nathana and	huantarias ahan a			. 13
Delivery-quant. and	breakaway char.:	T	electromagnet>Volt:	12
	•		Del. quantity cm3/:	
		†	> 100 <b>0</b> s.:	(0.006.00)
1nd speed 1/min:	1730	†		
Shutoff	•	+ .	Automatic starting	fuel delivery:
electromagnet>Volt:	12	+		
Del. quantity cm3/:	0.03.0	+	1st speed 1/min:	250
> 1000s.:			Shutoff	
2nd speed 1/min:			electromagnet>Volt:	12
Shutoff		1	Del. quantity cm3/:	45 n 85 n
electromagnet Volt:	12	1	> 1000s.:	-
		Τ	/ 10003	
Del. quantity cm3/:		T .	Ch. +-	
	(10.030.0)	† '	Shutoff electromagr	er:
3rd speed 1/min:	1550 -	†	_	
Shutoff	•		Cut-in	
electromagnet>Volt:	12			10.0
Del. quantity cm3/:		+ 1	Rated voltage :	12.0
> 1000s.:	(36.048.0)	+	<del>-</del>	
th speed 1/min:		<u>}</u> 1	Mounting and assemb	ly dimensions:
Shutoff	· · · · · ·	<b>↓</b>		•

Designation

K mm: 3.6...3.8

KF mm: -

MS1 mm: 1.4...1.7
Ya mm: 33.0...35.0
Yb mm: 42.8...51.2

#### Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : MWM

Edition : 14.03.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/12F140DR666 Type number : 0 460 424 128

Customer Part-No. :

Customer-specific information

Customer : MWM

Engine : 4.10 NA VW7100

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 109

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Start of delivery block
Piston stroke mm: 1.0
Outlet > : A

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1150 Setting value mm: 1.9...2.1

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1150

Setting value bar: 7.30...7.90

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 850

Del. quantity cm3/

> 1000s.: 69.5...70.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 > 1000S.: (5.0)

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 17.5...21.5

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 > 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1550

Del. quantity cm3/

> 1000s.: 44.0...50.0

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 75.0...115.00

mind> 1000s.: 75.0

Shutoff

electromagnet>Volt: 12

Inspection—pump test specifications Test specifications in parentheses

Timing-device characteristic:

> mm: (0.4...1.6)

TD travel mm: 1.9...2.1 mm: (1.5...2.5)

Shutoff		†	Del. quantity cm3/: 44.050.0
electromagnet>Volt:	12	+	> 1000s.: (41.053.0)
3rd speed 1/min:	1400	+	4th speed
TD travel mm:	3.203.80	+	Shutoff
> mm:	(2.904.10)	1	electromagnet>Volt: 12
Shutoff	120101111101	1	Del. quantity cm3/: 68.072.0
	10	1	> 1000s.: (66.573.5)
electromagnet>Volt:	12	T	
		Ť	5th speed 1/min: 850
Supply-pump pressur	e characteristic:	†	Shutoff
		+	electromagnet>Volt: 12
1st speed 1/min:	500	+	Del. quantity cm3/: 69.570.5
Supply-pump		+	> 1000s.: (67.073.0)
pressure> bar:	4.45.0	+	6th speed 1/min: 500
Shutoff		1	Shutoff
electromagnet>Volt:	12	1	electromagnet>Volt: 12
2nd speed 1/min:		1	Del. quantity cm3/: 53.059.0
	1000	3	> 1000s.: (51.061.0)
Supply-pump	./ " " " "	T	/ 10003.: (31.001.0)
•	6.77.3	T	
Shutoff		†	
electromagnet>Volt:		+	
3rd speed 1/min:	1150	+	Electr. shutoff:
Supply-pump		+	
	7.37.9	1	1st speed 1/min: 400
Shutoff		1	Charge press. hPa: -
electromagnet>Volt:	12	1	Del. quantity cm3/: 0.003.00
		T	> 1000s.: (0.003.00)
	1400	T	
Supply-pump	6.4.00	Ť	Shutoff
	8.49.0	+	electromagnet>volt: -
Shutoff		+	
electromagnet>Volt:	12	+	Idle delivery:
		+	
Overlow quantity at	overflow valve:	+	1st speed 1/min: 400
		+	Shutoff
1st speed 1/min:	500	1	electromagnet>Volt: 12
Shutoff	300	1	Del. quantity cm3/: 17.521.5
	12	1	> 1000s.: (15.523.5)
electromagnet>Volt:		T	
	40.281.4	T	Dispersion cm3/: 4.0
quantity> cm3/10s:		†	> 1000s.: (5.0)
2nd speed 1/min:	1400	+	2nd speed 1/min: 320
Shutoff		+	Shutoff
electromagnet>Volt:	12	+	electromagnet>Volt: 12
Overflow :	41.6125.0	+	Del. quantity cm3/: 43.051.0
quantity> cm3/10s:		1	> 1000s.: (41.053.0)
quality of the second		1	3rd speed 1/min: 480
Delivery-quant. and	breakausy chan :	1	Shutoff
betivery quarter and	Di Caraway Cilai	L	electromagnet>Volt: 12
		T	
	4770	T	Del. quantity cm3/: 0.006.00
1nd speed 1/min:	1730	†	> 1000s.: (0.006.00)
Shutoff		<b>†</b>	
electromagnet>Volt:	12	+	Automatic starting fuel delivery:
Del. quantity cm3/:	0.03.0	+	
> 1000s.:		+	1st speed 1/min: 250
2nd speed 1/min:		+	Shutoff
Shutoff		1	electromagnet>Volt: 12
electromagnet Volt:	12	1	Del. quantity cm3/: 35.075.0
Del. quantity cm3/:	13 0 27 0	1	> 1000s.: -
> quantity cms/:		T	/ IUUU3.i =
> 1000 •	(40 0 70 0)	ì	
	(10.030.0)	†	
3rd speed 1/min:	(10.030.0)	‡	Shutoff electromagnet:
	(10.030.0) 1550	† †	

>min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8

KF mm: -

MS1 mm: 1.4...1.7 Ya mm: 37.3...39.3 Yb mm: 34.0...44.7

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

1/min: 1150 Speed BOSCH-INJ.-PUMP TEST SPECIFICATIONS Setting value mm: 1.9...2.1 Shutoff Note inst. in remarks column electromagnet>Volt: 12 Test scheet : MWM Supply-pump pressure Edition : 14.03.96 Speed 1/min: 1150 replaces Calibrating oil Setting value bar: 7.30...7.90 : ISO-4113 Shutoff Injection pump : VE4/12F1500R667 electromagnet>Volt: 12 Type number : 0 460 424 129 Customer Part-No. : Full-load del. w/out charge press.: 1/min: 850 Speed Customer-specific information Del. quantity cm3/ Customer : MWM > 1000s.: 69.5...70.5 Shutoff Engine : 4.10 NA F1000 electromagnet>Volt: 12 cm3/: 4.0 Dispersion TEST BENCH REQUIREMENTS 1000s.: (5.0) Overflow restricti: 1 463 456 303 Low-idle speed regulation 1/min: 400 Speed Calibrating-oil return>temp. > °C Del. quantity cm3/ 1000s.: 15.5...19.5 with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 3.5 Inlet press., bar : 0.30...0.40 1000s.: (5.0) Calibrating nozzle-holder : 1 688 901 109 Full-load speed regulation assembly> beed 1/min: 1670 Opening | bar: 204.00...210.00 Del. quantity cm3/ Pressure> 1000s.: 42.0...48.0 > Shutoff Perforated-plate diameter> mm: 0.5 electromagnet>Volt: 12 Start: Test inj. tubing : 1 680 750 017 Speed 1/min: 100 Del. quantity cm3/: 75.0...115.00 Outside diameter : 6.00 x Wall>thickness : 2.00 1000s.: 75.0 mm: 840 Shutoff x Length> electromagnet>Volt: 12 Start of delivery Inspection-pump test specifications Prestroke mm: -Test specifications in parentheses (from BDC): -Timing-device characteristic: Start of delivery block Piston stroke mm: 1.0 1/min: 1000 Outlet > 1st speed : A mm: 0.7...1.3 TD travel mm: (0.4...1.6) Injection-pump setting values > electromagnet>Volt: 12 Test specifications in parentheses 2nd speed 1/min: 1150

mm: 1.9...2.1

mm: (1.5...2.5)

TD travel

Timing-device travel

Shutoff		+	Del. quantity cm3/: 67.071.0
electromagnet>Volt:	12	+	> 1000s.: (65.572.5)
3rd speed 1/min:	1400	+	4th speed 1/min: 850
	3.203.80	+	Shutoff
	(2.904.10)	+	electromagnet>Volt: 12
Shutoff		+	Del. quantity cm3/: 69.570.5
electromagnet>Volt:	12	+	> 1000s.: (67.073.0)
Supply-pump pressur	e characteristic:	†	5th speed 1/min: 500 Shutoff
1-+	500	†	electromagnet>Volt: 12
1st speed 1/min: Supply-pump		Ŧ	Del. quantity cm3/: 53.059.0 > 1000s.: (51.061.0)
pressure> bar: Shutoff	4.45.0	‡	
electromagnet>Volt:	12	+	
2nd speed 1/min:		+	Electr. shutoff:
Supply-pump		+	
pressure> bar: Shutoff	6.77.3	†	1st speed 1/min: 400 Charge press. hPa: -
electromagnet>Volt:	12	Ι	Del. quantity cm3/: 0.003.00
3rd speed 1/min:		Ι	> 1000s.: (0.003.00)
Supply-pump	1138	1	Shutoff
	7.37.9	1	electromagnet>volt: -
Shutoff		1	e te et en amagnices votet
electromagnet>Volt:	12	1	Idle delivery:
4th speed 1/min:	1400	1	
Supply-pump		Ŧ	1st speed 1/min: 400
	8.49.0	1	Shutoff
Shutoff		+	electromagnet>Volt: 12
electromagnet>Voit:	12	+	Del. quantity cm3/: 15.519.5
<del>-</del>		+	> 1000s.: (13.521.5)
Overlow quantity at	overflow valve:	+	Dispersion cm3/: 4.0
		+	> 1000s.: (5.0)
1st speed 1/min: Shutoff	500	‡	2nd speed 1/min: 290 Shutoff
electromagnet>Volt:	12	+	electromagnet>Volt: 12
	40.281.4	+	Del. quantity cm3/: 23.031.0
quantity> cm3/10s:		+	> 1000s.: (21.033.0)
2nd speed 1/min:	1500	+	3rd speed 1/min: 500
Shutoff		†	Shutoff
electromagnet>Volt:	12	+	electromagnet>Volt: 12
	41.6125.0	+	Del. quantity cm3/: 0.006.00
quantity> cm3/10s:	(26.6140.0)	†	> 1000s.: (0.006.00)
Delivery-quant. and	breakaway char.:	Ī	Automatic starting fuel delivery:
		I	1st speed 1/min: 250
1nd speed 1/min:	1840	1	Shutoff
Shutoff	70-0	1	electromagnet>Volt: 12
electromagnet>Volt:	12	1	Del. quantity cm3/: 35.075.0
Del. quantity cm3/:		1	> 1000s.: -
> 1000s.:		1	
Rnd speed 1/min:		+	Shutoff electromagnet:
Shutoff	12	†	Contraction
electromagnet Volt:	16 12 D 26 D	T	Cut-in
Del. quantity cm3/:		T	>min voltage : 10.0 Rated voltage : 12.0
	(9.029.0)	Ι	Rated voltage : 12.0
3rd speed 1/min: Shutoff	1,700	I	Mounting and assembly dimensions:
electromagnet>Volt:	12	I	House my drid assembly dimensions:
erectionalier-vort:	16	T	

# Designation

K mm: 3.6...3.8 KF mm: mm: 1.4...1.7 MS1 mm: 39.0...41.0 mm: 40.8...49.2 Ya

Remarks:

Yb

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : MWM Edition : 14.03.96

replaces

Calibrating oil : ISO-4113

: VE4/12F1500R668 Injection pump Type number : 0 460 424 130

Customer Part-No. :

Customer-specific information

Customer : MWM

Engine : 4.10 T EURO IF 1000T

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer>: 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly>

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Charge press. hPa: 1200

Setting value mm: 3.1...3.3

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1200 Charge press hPa: 1200

Setting value bar: 7.30...7.90

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 850 Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 91.5...92.5

Shutoff

electromagnet>Volt: 12 cm3/: 4.0 Dispersion 1000s.: (5.0)

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/

1000s.: 49.5...53.5

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 390 hPa: -Charge press Del. quantity cm3/

1000s.: 5.0...9.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1650 Charge press hPa: 1200

Del. quantity cm3/

1000s.: 67.0...73.0

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

hPa: -Charge press

Del. quantity cm3/: 63.00...103.00

1000s.: 63.00 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

	1200	+		
	1.11.7	†	and another allows	. 700
	(0.82.0)	<b>T</b>	1nd speed 1/min	
electromagnet>Volt:		Ť	Charge-air pressure point> hPa	e-setting : 500
2nd speed 1/min:	1200	I	· ·	
	3.13.3	I	LDA-stroke mm Shutoff	-
> mm:	(2.73.7)	I	electromagnet>Volt	. 12
Shutoff "M".	(2.73.7)	Ι	Del. quantity cm3/	. 16 • 74 5 77 5
electromagnet>Volt:	12	Ι	> quarterly cliss	(72.080.0)
3rd speed 1/min:	1400	1	2nd speed 1/min	
	1200	1	Charge press. hPa	
	4.605.20	1	Shutoff	. 100
> mm:	(4.305.50)	1	electromagnet Volt:	: 12
Shutoff		1	Del. quantity cm3/:	
electromagnet>Volt:	12	+	> 1000s.	
	·	1	3rd speed 1/min:	
Supply-pump pressur	e characteristic:	+	Charge press. hPa:	
1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,		į.	Shutoff	
1st speed 1/min:	500	+	electromagnet>Volt:	: 12
Charge press. hPa:	1200	+	Del. quantity cm3/:	
Supply-pump		+		(19.039.0)
pressure> bar:	4.24.8	+	4th speed 1/min:	
Shutoff		+	Charge press. hPa:	: 1200
electromagnet>Volt:	12	+	Shutoff	<b>.</b>
2nd speed 1/min:		+	electromagnet>Volt:	
	1200	+	Del. quantity cm3/:	
Supply-pump		+		(64.076.0)
•	6.57.1	+	5th speed 1/min:	
Shutoff	40	†	Charge press. hPa:	1200
electromagnet>Volt:		†	Shutoff	40
3rd speed 1/min:		†	electromagnet>Volt:	
Charge press. hPa:	1200	T	Del. quantity cm3/:	
Supply-pump	7.37.9	Ť		(88.595.5)
•	1.31.9	I	6th speed 1/min: Charge press. hPa:	
Shutoff electromagnet>Volt:	10	Ι	Shutoff	1200
4th speed 1/min:		I	electromagnet>Volt:	12
Charge press. hPa:		I	Del. quantity cm3/:	
Supply-pump	1200	$\mathbf{I}$	> 1000s.:	(87.097.0)
	8.18.7	1	7th speed 1/min:	850
Shutoff		1	Charge press. hPa:	1200
electromagnet>Volt:	12	1	Shutoff	,
9		1	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	1	Del. quantity cm3/:	91.592.5
•		+	> 1000s.:	(89.095.0)
1st speed 1/min:	500	+	8th speed 1/min:	500
Charge press. hPa:	-	+	Charge press. hPa:	-
Shutoff		+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	
	40.281.4	+	Del. quantity cm3/:	
quantity> cm3/10s:		+	> 1000s.:	(47.055.5)
2nd speed 1/min:		+		
Charge press. hPa:	1200	+		
Shutoff	40	†	ml	
electromagnet>Volt:		†	Electr. shutoff:	
	36.10119.40	†	104 apard 1/m2	400
quantity> cm3/10s:	(21.10134.40)	Ť	1st speed 1/min:	
Delivery-quant. and	hnookayay ahan	Ţ	Charge press. hPa: Del. quantity cm3/:	
verivery-duant, and	Dreakaway Char.;	+	vet. uddrittey tmb/:	0.00

1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 390 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.0...9.0 > 1000s.: (3.0...11.0) cm3/: 4.0 Dispersion 1000s.: (5.0) 1/min: 300 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.0...30.0 > 1000s.: (20.0...32.0) 3rd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 30.0...70.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.6...3.8 K KF mm: mm: 1.3...1.6 MS1 mm: 39.5...41.5 Ya mm: 40.8...49.2 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor—head end

Note inst. in remarks column

Test scheet : MWM

Edition : 14.03.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1300R669

Type number : 0 460 424 131

Customer Part-No. :

Customer-specific information

Customer : MWM

: 4.10 T EURO I VW8140 Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00

Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly>

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

mm: 0.5 diameter>

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00

x Length> mm: 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200 Charge press. hPa: 1200

Setting value mm: 3.1...3.3

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1200 Speed hPa: 1200 Charge press

Setting value bar: 7.30...7.90

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 850 Speed Charge press. hPa: 1200

Del. quantity cm3/

1000s.: 91.5...92.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 1000s.: (5.0)

Full-load del. w/out charge press.:

beed 1/min: 500

Del. quantity cm3/

1000s.: 49.5...53.5

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 400 Charge press hPa: -

Del. quantity cm3/

1000s.: 8.0...12.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (5.0)

Full-load speed regulation

1/min: 1530 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 65.0...71.0

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed

hPa: -Charge press

Del. quantity cm3/: 63.00...103.00

1000s.: 63.00 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1000

	1200	+		
	1.11.7	†	And ones Almin	700
	(0.82.0)	+	1nd speed 1/min	
electromagnet>Volt:	12	<b>T</b>	Charge-air pressure	
2nd speed 1/min:		†	•	500
	1200	†	LDA-stroke mm.	_
	3.13.3	†	Shutoff	40
	(2.73.7)	+	electromagnet>Volt	
Shutoff	4.0	+	Del. quantity cm3/	: 74.577.5
electromagnet>Volt:	12	t		(72.080.0)
3rd speed 1/min:		t	2nd speed 1/min:	
	1200	+	Charge press. hPa:	: 1200
	4.605.20	t	Shutoff	
	(4.305.50)	+	electromagnet Volt:	
Shutoff		+	Del. quantity cm3/:	
electromagnet>Volt:	12	+	> 1000s.:	
		+	3rd speed 1/min:	
Supply-pump pressur	e characteristic:	+	Charge press. hPa:	: 1200
		+	Shutoff	
1st speed 1/min:	500	+	electromagnet>Volt:	: 12
Charge press. hPa:	1200	+	Del. quantity cm3/:	
Supply-pump		+		(19.039.0)
	4.24,8	+	4th speed 1/min:	1530
Shutoff		+	Charge press. hPa:	1200
electromagnet>Volt:	12	+	Shutoff	
2nd speed 1/min:		1	electromagnet>Volt:	: 12
· · · · · · · · · · · · · · · · · · ·	1200	+	Del. quantity cm3/:	
Supply-pump		1		(62.074.0)
	6.57.1	1	5th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	
3rd speed 1/min:		1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump		1		(91.098.0)
pressure> bar:	7.37.9	1	6th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	.200
4th speed 1/min:	1400	1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump	1200	1	> 1000s.:	(87.097.0)
	8.18.7	1	7th speed 1/min:	
Shutoff	J. 1. 1. J. 1	1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	1200
cecour amagnet, voce.		1	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	1	Del. quantity cm3/:	91.5 92.5
over ton quarterey at	over tow vacte.	1		(89.095.0)
1st speed 1/min:	500	4	8th speed 1/min:	
Charge press. hPa:		1	Charge press. hPa:	
Shutoff		1	Shutoff	
electromagnet>Volt:	12	1	electromagnet>Volt:	12
Overflow :	38.883.3	1	Del. quantity cm3/:	
quantity> cm3/10s:		1	> 1000s.:	(47.055.5)
2nd speed 1/min:		1	10000.	\ T1 10111JJ1J/
Charge press. hPa:		Ι		
Shutoff	1200	I		
electromagnet>Volt:	12	I	Electr. shutoff:	
	36.10119.40	I	Lieur . Shului I.	
quantity> cm3/10s:		I	1st speed 1/min:	400
quarterty/ UII3/105:	(61.10104.40/	I	Charge press. hPa:	
Delivery-quant. and	hnaakausy chan	I	Del. quantity cm3/:	
wellververunald, and	DICOROWOY LUCE.	-	PELL GUGITLILY LIBOTA	U.UUJ.UU

1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 400 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 8.0...12.0 1000s.: (6.0...14.0) cm3/: 4.0 Dispersion 1000s.: (5.0) 1/min: 325 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 28.0...38.0 1000s.: (27.0...39.0) 3rd speed 1/min: 430 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 63.0...103.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 K KF mm: mm: 1.3...1.6 MS1 mm: 45.5...46.5 Ya mm: 36.3...44.7 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and

speed-control lever in rated speed

Measurement point = edge of control lever on distributor-head end

position

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : MAX

Edition : 14.03.96

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F1400R682 Type number : 0 460 424 133

Customer Part-No. :

Customer-specific information Customer : MAXION

Engine : S4T-PLUS-EURO I

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly>

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1150 Charge press. hPa: 1400

Setting value mm: 2.4...2.6

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1150 hPa: 1400 Charge press

Setting value bar: 6.70...7.30

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

1/min: 950 Speed Charge press. hPa: 1400

Del. quantity cm3/

1000s.: 95.0...96.0

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 74.5...78.5

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

1/min: 350 Speed Charge press hPa: -

Del. quantity cm3/

1000s.: 22.0...26.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (5.0)

Full-load speed regulation

1/min: 1570 Speed Charge press hPa: 1400

Del. quantity cm3/

1000s.: 59.5...65.5

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100 Speed Charge press hPa: -

Del. quantity cm3/: 125.0...165.0

mind> 1000s.: 125.0

Shutoff

electromagnet>Volt: 12

Inspection—pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 950

Charge press hPa: TD travel mm:	1400 0.91.5	İ		
> mm:	(0.61.8)	I	1nd speed 1/min:	750
electromagnet>Volt:		T	Charge-air pressure	
2nd speed 1/min:	1150	Ι	point> hPa:	
	1400	Ι	LDA-stroke mm:	
TD travel mm:		I	Shutoff	
	(2.03.0)	I	electromagnet>Volt:	12
Shutoff	(2.03.0)	I	Del. quantity cm3/:	84.0 88.0
electromagnet>Volt:	12	1		(81.590.5)
3rd speed 1/min:	1350	1	2nd speed 1/min:	
	1400	1	Charge press. hPa:	
	3.103.70	1	Shutoff	1400
> mm:	(2.804.00)	1	electromagnet Volt:	12
Shutoff	(2,00,11,100)	1	Del. quantity cm3/:	0.003.00
electromagnet>Volt:	12	1	> 1000s.:	
		1	3rd speed 1/min:	
Supply-pump pressure	e characteristic:	1	Charge press. hPa:	
ouppey pamp procour	0.14.4000.100101	1	Shutoff	1 100
1st speed 1/min:	500	1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump		1		(28.548.5)
pressure> bar:	3.94.5	1	4th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	
2nd speed 1/min:		1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump		1		(56.568.5)
	5.96.5	1	5th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	
3rd speed 1/min:	1150	1	electromagnet>Volt:	12
Charge press. hPa:		+	Del. quantity cm3/:	92.096.0
Supply-pump		<u> </u>		(90.597.5)
	6.77.3	+	6th speed 1/min:	950
Shutoff		+	Charge press. hPa:	1400
electromagnet>Volt:	12	+	Shutoff	
4th speed 1/min:		+	electromagnet>Volt:	12
Charge press. hPa:	1400	+	Del. quantity cm3/:	95.096.0
Supply-pump		+	> 1000s.:	(92.598.5)
pressure> bar:	7.58.1	+	7th speed 1/min:	700
Shutoff		+	Charge press. hPa:	1400
electromagnet>Volt:	12	+	Shutoff	
		+	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	99.0105.0
		+		(97.0107.0)
1st speed 1/min:		+	8th speed 1/min:	
Charge press. hPa:	-	+	Charge press. hPa:	-
Shutoff		+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	
	38.883.3	+	Del. quantity cm3/:	
quantity> cm3/10s:		+	> 1000s.:	(72.081.0)
2nd speed 1/min:		+		
Charge press. hPa:	1400	+		
Shutoff		+		
electromagnet>Volt:	12	†	Electr. shutoff:	
Overflow :	56.10119.40	+	A	/00
quantity> cm3/10s:	(21.10134.40)	+	1st speed 1/min:	
		+	Charge press. hPa:	
Delivery-quant, and	preakaway char.:	4	Del. quantity cm3/:	u.uu5.00

> 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 22.0...26.0 1000s.: (20.0...28.0) cm3/: 4.0 Dispersion 1000s.: (5.0) > 1/min: 270 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 49.0...57.0 1000s.: (47.0...59.0) 3rd speed 1/min: 450 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 65.0...105.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.6...3.8 K mm: -KF mm: 1.2...1.5 MS1 mm: 28.0...30.0 Ya mm: 45.8...54.2 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed

Measurement point = edge of control lever on distributor-head end

position

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : MAN Edition : 25.03.96

replaces :-

Calibrating oil : ISO-4113

Injection pump : VE4/12F120DR568-1
Type number : 0 460 424 134

Customer Part-No. :

Customer-specific information

Customer : MAN

Engine : D 0824 LF01

Power KW: 114

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 110

**Opening** 

Pressure> bar: 247.00...253.00

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 850 Charge press. hPa: 1500 Setting value mm: 2.0...2.4

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 850 Charge press hPa: 1500

Setting value bar: 6.40...7.00

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 1000 Charge press. hPa: 1500

Del. quantity cm3/

> 1000s.: 107.5...108.5

Shutoff

electromagnet>Volt: 24
Dispersion cm3/: 4.0
> 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/

> 1000s.: 60.5...61.5

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

> 1000s.: 13.0...17.0

Shutoff

electromagnet>Volt: 24
Del. quantity cm3/: 6.0
> 10008:: (6.5)

Full-load speed regulation

Speed 1/min: 1300 Charge press hPa: 1500

Del. quantity cm3/

> 1000s.: 72.0...78.0

Shutoff

electromagnet>Volt: 24

Start:

Speed 1/min: 100

Del. quantity cm3/: 105.0...165.0

mind> 1000s.: 105.0

Shutoff

electromagnet>Volt: 24

Inspection-pump test specifications
Test specifications in parentheses

Timing-device chara	cteristic:	Ŧ	Delivery-quant. and	breakaway char.:
1st speed 1/min:	750	Ī		
		T	1md amount 1/min.	EEO
Charge press hPa:	1200	Ť	1nd speed 1/min:	
TD travel mm:	0.71.5	+	Charge-air pressure	
	(0.41.8)	+	point> hPa:	
electromagnet>Volt:	24	+	LDA-stroke mm:	7.6
2nd speed 1/min:	850	+	Shutoff	
	1500	1	electromagnet>Volt:	24
TD travel mm:		1	Del. quantity cm3/:	
> mm:	(1.52.9)	1		(78.583.5)
Shutoff	(1.52.7)	T	2nd speed 1/min:	
	2/	T		
electromagnet>Volt:		Ť	Charge press. hPa:	1500
3rd speed 1/min:		+	Shutoff	
	1500	+	electromagnet Volt:	
TD travel mm:	3.604.40	+	Del. quantity cm3/:	0.003.00
	(3.304.70)	+	> 1000s.:	-
Shutoff		1	3rd speed 1/min:	1340
electromagnet>Volt:	24	1	Charge press. hPa:	
4th speed 1/min:		1	Shutoff	1500
	1500	T		24
		T	electromagnet>Volt:	
TD travel mm:		<b>†</b>	Del. quantity cm3/:	
> mm:		+	> 1000s.:	
		+	4th speed 1/min:	
Supply-pump pressur	e characteristic:	+	Charge press. hPa:	1500
		+	Shutoff	
1st speed 1/min:	550	1	electromagnet>Volt:	24
Charge press. hPa:		1	Del. quantity cm3/:	72 0 78 0
Supply-pump	1300	1	> 1000s.:	
	4.95.5	T	5th speed 1/min:	
· ·	4.7	T		
Shutoff	•	Ť	Charge press. hPa:	1200
electromagnet>Volt:		+	Shutoff	
2nd speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:	1500	+	Del. quantity cm3/:	
Supply-pump		+	> 1000s.:	(99.0107.0)
	6.47.0	1	6th speed 1/min:	1000
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	24	1	Shutoff	
3rd speed 1/min:	1200	T	electromagnet>Volt:	24
ora speed 1/min:	4500	T	Pel manditu and	407 F 409 F
Charge press. hPa:	1500	+	Del. quantity cm3/:	10(.5106.5
Supply-pump		+		(105.5110.5)
•	8.28.8	+	7th speed 1/min:	
Shutoff		+	Charge press. hPa:	1500
electromagnet>Volt:	24	+	Shutoff	
-		+	electromagnet>Volt:	24
Overlow quantity at	overflow valve:	1	Del. quantity cm3/:	111.5116.5
over con quarterly at	over result vacion	1	> 1000s.:	(109.5118.5)
1st speed 1/min:	550	1	8th speed 1/min:	
•		T		
Charge press. hPa:	-	Ť	Charge press. hPa:	1300
Shutoff		+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	
	75.0119.4	+	Del. quantity cm3/:	110.0115.0
quantity> cm3/10s:	(60.0134.4)	+		(107.0118.0)
2nd speed 1/min:		+	9th speed 1/min:	
Charge press. hPa:		1	Charge press. hPa:	
Shutoff		1	Shutoff	
	12	1	electromagnet>Volt:	2/4
electromagnet>Volt:		Ţ		
	97.2180.5	T	Del. quantity cm3/:	
quantity> cm3/10s:	(82.2195.5)	+	> 1000s.:	(58.064.0)

10th speed 1/min: 550 Charge press. hPa: 1500 Shutoff electromagnet: Shutoff electromagnet>Volt: 24 Cut-in Del. quantity cm3/: 109.5...118.5 : 20.0 >min voltage 1000s.: (108.0...129.0) · 24.0 Rated voltage Mounting and assembly dimensions: Mech. shutoff: Designation 1st_speed 1/min: 1200 mm: 3.6...3.8 K Charge press. hPa: 1500 KF mm: -Del. quantity cm3/: 0.0...3.0 mm: 1.3...1.6 MS1 1000s - -LDA stroke mm: 7.6 mm: KSB 7.1MM Shutoff FH mm: 37.4...40.4 electromagnet>volt: 24 Ya Yb mm: 35.4...40.6 Flectr. shutoff: Remarks: 1st speed 1/min: 400 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 Ya = Distance between VE flange and 1000s.: (0.00...3.00) speed-control lever in idle Shutoff position Measurement point = edge of control electromagnet>volt: -Lever on drive end Idle delivery: 1/min: 400 1st speed Yb = Distance between VE flange and Shutoff speed-control lever in rated speed electromagnet>Volt: 24 position Del. quantity cm3/: 13.0...17.0 Measurement point = edge of control 1000s.: (10.0...20.0) lever on distributor-head end cm3/: 6.0Dispersion 1000s.: (6.5) > 1/min: 500 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.0...3.0 1000s.: -Automatic starting fuel delivery: 1st speed 1/min: 430 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 48.0...88.0 1000s.: -2nd speed 1/min: 330 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 75.0...105.0 1000s.: -3rd speed 1/min: 100 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 44.0...46.0

1000s.: -

Timing-device travel BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 900 Note inst. in remarks column Charge press. hPa: 1000 Setting value mm: 1.20...1.60 Test scheet : CDC Shutoff Edition : 12.02.96 electromagnet>Volt: 24 replaces Calibrating oil : ISO-4113 Supply-pump pressure Injection pump : VE6/12F1250R498-4 Speed 1/min: 900 : 0 460 426 245 Charge press hPa: 1000 Type number Customer Part-No.: 3 282 753 Setting value bar: 5.90...6.50 Shutoff Customer-specific information electromagnet>Volt: 24 Customer : CDC EURO2 Full-load del. with charge press.: Engine : 6 BTAA 5,9 B DI 1/min: 850 Charge press. hPa: 1000 KW: 107 Power 1/min: 2500 Del. quantity cm3/ Speed 1000s.: 82.50...83.50 Shutoff TEST BENCH REQUIREMENTS electromagnet>Volt: 24 Overflow restricti: 1 463 456 303 Dispersion cm3/: 5.0 1000s.: (5.0) Calibrating-oil Full-load del. w/out charge press.: return>temp. > °C with>thermometer> : 44.00...46.00 1/min: 500 Speed Inlet press., bar : 0.30...0.40 Del. quantity cm3/ 1000s.: 69.00...70.00 Calibrating nozzle-holder Shutoff : 1 688 901 109 electromagnet>Volt: 24 assembly> Dispersion cm3/: 5.0 1000s.: (5.0) Opening bar: 204.00...210.00 Pressure> Low-idle speed regulation Perforated-plate 1/min: 330 diameter> mm: 0.5 Speed Del. quantity cm3/ 1000s.: 7.0...11.0 Test inj. tubing : 1 680 750 017 Shutoff electromagnet>Volt: 24 Outside diameter : 6.00 Del. quantity cm3/: 5.5 1000s.: (7.0) x Wall>thickness : 2.00 x Length> mm: 840 Full-load speed regulation Start of delivery 1/min: 1380 Prestroke mm: -Speed > (from BDC): -Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 60.0...66.0 Start of delivery block Piston stroke mm: 1.4 Shutoff electromagnet>Volt: 24 > mm: +-0.02(0.06): D Outlet > Start:

1/min: 100

Speed

Charge press hPa: -

Injection-pump setting values
Test specifications in parentheses

	440 0 450 0	•		
Del. quantity cm3/:	110.0150.0	+	Supply-pump	
mind> 1000s.:	130.0	+	pressure> bar:	7.27.8
Shutoff		+	Shutoff	
electromagnet>Volt:	24	1	electromagnet>Volt:	24
eteet, Glagnet, vote.	<b>6</b> 4	1	c to to to omagnic or to to t	
Tunnantian mumm tan	t amazifiantiana	T	Overlay aventity of	avantlas, valvas
Inspection pump tes		T	Overlow quantity at	over flow valve:
Test specifications	in parentheses	†		
		+	1st speed 1/min:	500
Timing-device chara	cteristic:	+	Charge press. hPa:	_
•		+	Shutoff	
1st speed 1/min:	450	1	electromagnet>Volt:	24
Charge press hPa:		1	Overflow :	11 70 84 10
The tracks	2.00 7.00	T		
TD travel mm:	2.003.00	+	quantity> cm3/10s:	(20.70101.10)
* 11011.4	(1.803.20)	+	2nd speed 1/min:	
KSB/AFB		+	Charge press. hPa:	1000
valve > Volt:	24	+	Shutoff	
electromagnet>Volt:	24	1	electromagnet>Volt:	24
2nd speed 1/min:		1	Overflow :	
Charge press hPa:		1	quantity> cm3/10s:	
		T	quantity/ cmp/10s.	(40.00154.00)
TD travel mm:		†		
	(0.301.70)	+	Delivery-quant. and	breakaway char.:
Shutoff		+		
electromagnet>Volt:	24	+		
4th speed 1/min:		1	1nd speed 1/min:	600
Charge press hPa:		1	Charge-air pressure-	
The travel	1.201.60	1	point> hPa:	
		T		
	(0.702.10)	+		7.0
Shutoff		†	Shutoff	
electromagnet>Volt:	24	+	electromagnet>Volt:	24
5th speed 1/min:	1250	+	Del. quantity cm3/:	83.5084.50
Charge press. hPa:		1		(80.0088.00)
	2.403.20	1	2nd speed 1/min:	
> mm:	(2.103.50)	- 1	Charge press. hPa:	
	(2.103.50)	T		1000
Shutoff		†	Shutoff	·n.
electromagnet>Volt:	24	†	electromagnet Volt:	
		+	Del. quantity cm3/:	
Supply-pump pressure	e characteristic:	+		(0.003.00)
		+	3rd speed 1/min:	1430
1st speed 1/min:	500	1	Charge press. hPa:	
Charge press. hPa:		1	Shutoff	, 5 5 5
<b>5</b> • • • • • • • • • • • • • • • • • • •	1888	- 1		2/.
Supply-pump	7.00 / 50	T	electromagnet>Volt:	45.0 /5.0
	3.904.50	†	Del. quantity cm3/:	
> bar:	-	t	> 1000s.:	
Shutoff		+	4th speed 1/min:	
electromagnet>Volt:	24	+	Charge press. hPa:	1000
2nd speed 1/min:		1	Shutoff	
Charge press. hPa:		1	electromagnet>Volt:	24
	1000	1	Del. quantity cm3/:	
Supply-pump	F /0 / 10	T		(55.071.0)
	5.406.10	<b>T</b>		
> bar:	_	+	5th speed 1/min:	
Shutoff		+	Charge press. hPa:	1000
electromagnet>Volt:	24	+	Shutoff	
3rd speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:		1	Del. quantity cm3/:	
•		1	> 1000s.:	(83.089.0)
Supply-pump	E 00 4 E0	T		
	5.906.50	T		
Shutoff		†	Charge press. hPa:	IUUU
electromagnet>Volt:	24	+	Shutoff	
th speed 1/min:		+	electromagnet>Volt:	24
harde press heat	1000	1	Del. quantity cm3/:	83.088.0

1000s.: (82.0...89.0) 7th speed 1/min: 500 Charge press. hPa: -Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 69.0...70.0 > 1000s.: (65.5...73.5) 1/min: 850 8th speed Charge press. hPa: 1000 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 82.5...83.5 1000s.: (80.0...86.0) Electr. shutoff: 1st speed 1/min: 350 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 330 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 7.0...11.0 1000s.: (4.0...14.0) Dispersion cm3/: 5.5 1000s.: (7.0) 1/min: 390 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 110.0...150.0 1000s.: -1/min: 240 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 68.0...88.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8 KF mm: 6.2...6.6 MS mm: - LDA stroke mm: 7.0

Ya mm: 34.8...38.8 Yb mm: 45.3...50.1

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

:

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Rated voltage

: 12.0

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : CDC Edition : 12.02.96 replaces Calibrating oil : ISO-4113 : VE6/12F1250R498-5 Injection pump : 0 460 426 246 Type number Customer Part-No.: 3 282 744 Customer-specific information : CDC EURO2 Customer Engine : 6 BTAA 5,9 B DI KW: 120 Power 1/min: 2500 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 44.00...46.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 109 assembly> Opening bar: 204.00...210.00 Pressure> Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840 Start of delivery Prestroke mm: -(from BDC): -

1/min: 1100 Speed Charge press. hPa: 1000 Setting value mm: 1.60...2.00 Shutoff electromagnet>Volt: 24 Supply-pump pressure 1/min: 1100 Speed Charge press hPa: 1000 Setting value bar: 6.50...7.10 Shutoff electromagnet>Volt: 24 Full-load del. with charge press.: 1/min: 850 Speed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 79.50...80.50 Shutoff electromagnet>Volt: 24 cm3/: 5.0 Dispersion 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 71.00...72.00 > Shutoff electromagnet>Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0) Low-idle speed regulation Speed 1/min: 325 Del. quantity cm3/ 1000s.: 8.0...12.0 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0) Full-load speed regulation 1/min: 1380 Speed hPa: 1000 Charge press Del. quantity cm3/ 1000s.: 54.0...66.0 Shutoff electromagnet>Volt: 24 Start: 1/min: 100 Speed Charge press hPa: -

Timing-device travel

Outlet >

Start of delivery block Piston stroke mm: 1.4

Injection-pump setting values

Test specifications in parentheses

mm: +-0.02(0.06)

: D

vel. quantity cms/:		+		
mind> 1000s.:	75.0	+	1st speed 1/min:	500
Shutoff	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	Charge press. hPa:	
	3/	T		
electromagnet>Volt:	24	+	Shutoff	
		+	electromagnet>Volt:	24
Inspection pump tes	st specifications	+	Overflow :	41.7086.10
Test specifications		1	quantity> cm3/10s:	
rese specifications	in pareneneses	T		
_, , , , ,		Ť	2nd speed 1/min:	
Timing-device chara	icteristic:	+	Charge press. hPa:	1000
		+	Shutoff	
1st speed 1/min:	450	1	electromagnet>Volt:	24
		- 1	Overflow :	55 60 130 00
		T	Over tow	77.00(39.00
TD travel mm:	1.902.90	t	quantity> cm3/10s:	(40.00154.00)
> mm:	(1.703.10)	+		
KSB/AFB		1	Delivery-quant. and	breakaway char.
valve > Volt:	24	1	and and and	
		-		
electromagnet>Volt:	4400	Ť		400
2nd speed 1/min:		+	1nd speed 1/min:	
	1000	+	Charge-air pressure	-setting
TD travel mm:	1.602.00	1	point> hPa:	450
TD travel mm:	(1.102.50)	1		7.0
	(1.102.50)	T		7.0
Shutoff		+	Shutoff	
electromagnet>Volt:		+	electromagnet>Volt:	24
4th speed 1/min:	1250	+	Del. quantity cm3/:	77.5078.50
Charge press hPa:		1	> 1000s.:	(74.0082.00)
TD travel mm:	2.002.80	- 1	2nd speed 1/min:	
		T		
	(1.703.10)	+	Charge press. hPa:	1000
Shutoff		+	Shutoff	
electromagnet>Volt:	24	+	electromagnet Volt:	24
<b>.</b>		1	Del. quantity cm3/:	0.003.00
Supply-pump pressur	o charactorictics	1	> 1000s.:	(0.003.00)
auth (3-hauth hi easur	e character iscit.	T	3rd speed 1/min:	1//5
		+		
1st speed 1/min:	500	+	Charge press. hPa:	7000
Charge press. hPa:	1000	+	Shutoff	
Supply-pump		1	electromagnet>Volt:	24
	3.904.50	1	Del. quantity cm3/:	00 A AO A
•		T	2000c	00.0
> bar:	-	+	> 1000s.:	
Shutoff		+	4th speed 1/min:	
electromagnet>Volt:	24	+	Charge press. hPa:	1000
2nd speed 1/min:		1	Shutoff	
Change proce hear	1000	1	electromagnet>Volt:	2/.
Charge press. hPa:	1000	T	etettromagnet/vott.	E4 0 (/ D
Supply-pump		†	Del. quantity cm3/:	34.000.0
pressure> bar:	5.406.10	+		(52.068.0)
> bar:	_	, <del>†</del>	5th speed 1/min:	1250
Shutoff		7	Charge press. hPa:	1000
electromagnet>Volt:	2/.	1	Shutoff	
		T		2/.
3rd speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:	1000	+	Del. quantity cm3/:	
Supply-pump		+	> 1000s.:	(81.088.0)
pressure> bar:	6.507.10	1	6th speed 1/min:	1100
Shutoff		1	Charge press. hPa:	
	24	Ŧ	charge press. That	1000
electromagnet>Volt:		Ť	Shutoff	24
4th speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:	1000	+	Del. quantity cm3/:	81.586.5
Supply-pump		+	> 1000s.:	(80.088.0)
	7.07.6	1	7th speed 1/min:	
•		1	Charge press. hPa:	
Shutoff	21	T		
electromagnet>Volt:	<b>C4</b>	<b>T</b>	Shutoff	24
		+	electromagnet>Volt:	
Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	71.072.0

1000s.: (67.5...75.5) > 8th speed 1/min: 850 Charge press. hPa: 1000 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 79.5...80.5 1000s.: (77.0...83.0) Mech. shutoff: 1st speed 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: 24 Electr. shutoff: 1/min: 350 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 8.0...12.0 1000s.: (5.0...15.0) cm3/: 5.5 Dispersion > 1000s.: (7.0) 1/min: 410 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 80.0...120.0 1000s.: -2nd speed 1/min: 240 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 70.0...90.0 1000s.: -Shutoff electromagnet: Cut-in

Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 Κ KF mm: 6.2...6.6 MS mm: mm: 7.0 LDA stroke mm: 34.8...38.8 Ya mm: 45.3...50.1 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end position

>min voltage

: 10.0

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : CDC Edition : 12.02.96 replaces Calibrating oil : ISO-4113 : VE6/12F1250R498-6 Injection pump : 0 460 426 249 Type number Customer Part-No.: 3 282 743 Customer-specific information : CDC Customer

Engine : 6 BTAA 5,9 B DI

Power KW: 133 Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 109

Opening

Pressure> bar: 204.00...210.00

Perforated-plate

diameter> mm: 0.5

Test ini, tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery
Prestroke mm: > (from BDC): -

Start of delivery block Piston stroke mm: 1.4

> mm: +-0.02(0.06)

Outlet > : D

Injection—pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 850 Charge press. hPa: 1000

Setting value mm: 1.30...1.70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 850 Charge press hPa: 1000

Setting value bar: 5.50...6.10

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 850 Charge press. hPa: 1000

Del. quantity cm3/

> 1000s.: 86.00...87.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 5.0 > 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 59.50...60.50

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 5.0 > 1000s.: (5.0)

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

> 1000s.: 13.0...17.0

Shutoff

electromagnet>Volt: 12
Del. quantity cm3/: 5.5
> 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1380 Charge press hPa: 1000

Del. quantity cm3/

> 1000s.: 65.50...71.50

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100 Charge press hPa: -

Del. quantity of	:/Em	80.0110.0	+	Shutoff	
mind> 100	00s.:	80.0	+	electromagnet>Volt:	12
Shutoff			+	-	
electromagnet>\	/olt:	12	+	Overlow quantity at	overflow valve:
J			+		
Inspection-pump	tes	t specifications	+	1st speed 1/min:	500
		in parentheses	1	Charge press. hPa:	
		par orrentosos	1	Shutoff	
Timing-device of	hara	cteristic:	1	electromagnet>Volt:	12
	,,,,,,, <b>,</b>		1	Overflow :	41.7086.10
1st speed 1/	min:	450	1	quantity> cm3/10s:	
	hPa:		1	2nd speed 1/min:	
			T		
TD travel	(1811)	(1.703.10)	T	Charge press. hPa: Shutoff	1000
= '	ann :	(1.70.5.3.10)	T		10
KSB/AFB		42	†	electromagnet>Volt:	12 55 (0 470 00
valve > V			+	Overflow :	
electromagnet>V			†	quantity> cm3/10s:	(40.60154.00)
•	min:		+		
		1000	+	Delivery-quant. and	breakaway char.:
TD travel	mm :	0.601.40	+		
>	mm:	(0.301.70)	+		
Shutoff			+	1nd speed 1/min:	
electromagnet>V			+	Charge-air pressure	-setting
4th speed 1/	min:	850	+	point> hPa:	500
Charge press	hPa:	1000	+	Shutoff	
TD travel	mm:	1.301.70	+	electromagnet>Volt:	12
>	mm:	(0.80,2.20)	1	Del. quantity cm3/:	
Shutoff			+		(74.5082.50)
electromagnet>V	olt:	12	1	2nd speed 1/min:	
5th speed 1/	່ຫາກ	1250	1	Charge press. hPa:	
Charge press.			<del>┞╌╇╌╇╌╇╌╇╌╇╌╇╌╇</del> ╾╋	Shutoff	1000
TD travel		2.002.80	1	electromagnet Volt:	12
>		(1.703.10)	1	Del. quantity cm3/:	
Shutoff	******	(1.705.10)	$\mathbf{I}$		(0.003.00)
	101+	10	T	3rd speed 1/min:	
electromagnet>V	oct:	12	T		
Compale and make the same			T	Charge press. hPa:	1000
anbbra-brumb bus	ssure	e characteristic:	†	Shutoff	40
A	. •	500	†	electromagnet>Volt:	
***************************************	min:		†	Del. quantity cm3/:	
- · · · · · · · · · · · · · · · · · · ·	nPa:	1000	†	> 1000s.:	
Subbra-bamb			†	4th speed 1/min:	
•	bar:	3.904.50	+	Charge press. hPa:	1000
Shutoff			+	Shutoff	
electromagnet>V			+	electromagnet>Volt:	
2nd speed 1/1	min:	750	+	Del. quantity cm3/:	
Charge press.	hPa:	1000	+	> 1000s.:	(62.574.5)
Supply-pump			+	5th speed 1/min:	1250
pressure>	bar:	5.105.70	+	Charge press. hPa:	1000
Shutoff			+	Shutoff	
electromagnet>V	olt:	12	1	electromagnet>Volt:	12
	min:		1	Del. quantity cm3/:	
		1000	1		(82.089.0)
Supply-pump			1	6th speed 1/min:	
	har•	5.506.10	1	Charge press. hPa:	
Shutoff	~aı •	2.201110.10	1	Shutoff	. 500
electromagnet>V	01++	12	1	electromagnet>Volt:	12
	min:		Ι	Del. quantity cm3/:	
	hPa:		Ι	> 1000s.:	(84.591.5)
	urd:	1000	Ι		
Supply-pump	ha=-	40 75	T	The state of the s	
pressure>	uar:	6.97.5	T	Charge press. hPa:	<del></del>

Shutoff electromagnet>Volt: 12 Electr. shutoff: 1/min: 350 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 13.0...17.00 1000s.: (10.0...20.0) cm3/: 5.5Dispersion 1000s.: (7.0) 1/min: 410 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 80.0...120.0 1000s.: -1/min: 230 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 55.0...85.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 K KF mm: 6.2...6.6 mm: -MS mm: -LDA stroke mm: 34.8...38.8 Ya mm: 42.7...48.3 Yb

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: MWM Test scheet

: 06.03.96 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1400R665 Type number : 0 460 426 250

Customer Part-No. :

Customer-specific information

Customer

: MWM

: 6.10 NA Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly>

: 1 688 901 109

Opening

bar: 204.00...210.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length>

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Speed

Setting value mm: 2.70...2.90

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1200 Speed

Setting value bar: 8.00...8.60

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 750 Speed

Del. quantity cm3/ >

1000s.: 66.0...67.0

Shutoff

electromagnet>Volt: 12 cm3/: 4.0Dispersion 1000s.: (4.5)

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

1000s.: 14.0...18.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 3.5 1000s.: (5.0)

Full-load speed regulation

1/min: 1550 Speed

Del. quantity cm3/

1000s.: 47.50...54.50

Shutoff

electromagnet>Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 90.00...130.00

1000s.: 90.0 mind>

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1000 1st speed

mm: 0.60...1.20 TD travel > mm: (0.30...1.50)

electromagnet>Volt: 12

1/min: 1200 2nd speed

mm: 2.70...2.90 TD travel mm: (2.30...3.30)

Shutoff

electromagnet>Volt: 12 3rd speed 1/min: 1400

TD travel mm: 3.90...4.50 > mm: (3.60...4.80)

Shutoff

electromagnet>Volt: 12

Supply-pump pressure	characteristic: +	Shutoff
	+	electromagnet>Volt: 12
1st speed 1/min: 5	500 +	Del. quantity cm3/: 72.078.0
Supply-pump	+	> 1000s.: (70.080.0)
•	4.605.20	6th speed 1/min: 750
Shutoff	. +	Shutoff
electromagnet>Volt: 1	12 +	electromagnet>Volt: 12
2nd speed 1/min: 1	1000 +	Del. quantity cm3/: 66.067.0
Supply-pump	+	> 1000s.: (63.569.5)
pressure> bar: 7	7.007.60	7th speed 1/min: 500
Shutoff	+	Shutoff
electromagnet>Volt: 1	12 +	electromagnet>Volt: 12
3rd speed 1/min: 1		Del. quantity cm3/: 58.064.0
Supply-pump	+	> 1000s.: (56.066.0)
	3.008.60	
Shutoff	1	
electromagnet>Volt: 1	12	
4th speed 1/min: 1		Electr. shutoff:
Supply-pump	1	Eccott Statoff.
	3.609.20	1st speed 1/min: 400
Shutoff	T	Del. quantity cm3/: 0.003.00
electromagnet>Volt: 1	12 T	> 1000s.: (0.003.00)
etectromagnet/vott.	' ^c T	Shutoff
Occupation of the second	T T	
Overlow quantity at o	overtiow valve:	electromagnet>volt: -
1-4 1/ E	500	Tallo alotavonas
1st speed 1/min: 5	7	Idle delivery:
Shutoff	, T	Ant :
electromagnet>Volt: 1	5 50 400 5	1st speed 1/min: 400
	55.50100.5	Shutoff
quantity> cm3/10s: (	40.50175.57	electromagnet>Volt: 12
2nd speed 1/min: 1	400 +	Del. quantity cm3/: 14.018.00
Shutoff	+	> 1000s.: (12.020.00)
electromagnet>Volt: 1		Dispersion cm3/: 3.5
	52.70136.10	> 1000s.: (5.0)
quantity> cm3/10s: (	(37.70151.10)	2nd speed 1/min: 350
	+	Shutoff
Delivery-quant. and b	preakaway char.: +	electromagnet>Volt: 12
	+	Del. quantity cm3/: 31.039.0
	+	> 1000s.: (29.041.0)
1nd speed 1/min: 1	740	3rd speed 1/min: 450
Shutoff	1	Shutoff
electromagnet>Volt: 1	ż ↓	electromagnet>Volt: 12
Del. quantity cm3/: 0		Del. quantity cm3/: 0.003.00
> 1000s.: -		> 1000s.: (0.003.00)
2nd speed 1/min: 1		
Shutoff	1	Automatic starting fuel delivery:
electromagnet Volt: 1	2	
Del. quantity cm3/: 2		1st speed 1/min: 260
> 1000s.: (	18.038.0)	Shutoff
3rd speed 1/min: 1		electromagnet>Volt: 12
Shutoff	1	Del. quantity cm3/: 40.0080.00
electromagnet>Volt: 1	2	> 1000s.: -
Del. quantity cm3/: 4		7000011
	45.557.5)	Shutoff electromagnet:
		onatori etettionagniet.
4th speed 1/min: 14 Shutoff	T	Cut-in
	, T	
electromagnet>Volt: 1	£ 5 40 5	
Del. quantity cm3/: 6	7. 7. 70 F)	Rated voltage : 12.0
	64.070.5)	Marmadan and pascelle discussions
5th speed 1/min: 10	uuu +	Mounting and assembly dimensions:

# Designation

K mm: 3.6...3.8 mm: 1.1...1.4 ya mm: 41.0...43.0 yb mm: 37.8...46.2

### Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1000 Speed Charge press. hPa: 1000 Note inst. in remarks column Setting value mm: 1.60...2.00 Shutoff Test scheet : CDC electromagnet>Volt: 12 : 08.02.96 Edition replaces Supply-pump pressure Calibrating oil : ISO-4113 1/min: 1000 Speed Injection pump : VE6/12F1250R498-7 Charge press hPa: 1000 Type number : 0 460 426 251 Setting value bar: 6.00...6.60 Customer Part-No. : Shutoff electromagnet>Volt: 12 Customer-specific information Full-load del. with charge press.: : CUMMINS Customer 1/min: 850 Speed Charge press. hPa: 1000 : 6 BT Engine Del. quantity cm3/ TEST BENCH REQUIREMENTS 1000s.: 80.00...81.00 Shutoff Overflow restricti: 1 463 456 303 electr@magnet>Volt: 12 cm3/: 5.0 Dispersion Calibrating-oil 1000s.: (5.0) return>temp. > °C Full-load del. w/out charge press.: with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 1/min: 500 Speed Inlet press., bar : 0.30...0.40 Del. quantity cm3/ 1000s.: 58.50...59.50 Shutoff Calibrating nozzle-holder assembly> : 1 688 901 109 electromagnet>Volt: 12 Dispersion cm3/: 5.0 1000s.: (6.0) Opening Pressure> bar: 204.00...210.00 Low-idle speed regulation Perforated-plate diameter> mm: 0.5 Speed 1/min: 320 Del. quantity cm3/ 1000s.: 11.5...15.5 Test inj. tubing : 1 680 750 017 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.5 Outside diameter : 6.00 x Wall>thickness : 2.00 1000s.: (7.0) x Length> mm: 840 Full-load speed regulation Start of delivery 1/min: 1380 Speed Prestroke mm: -Charge press hPa: 1000 > (from BDC): -Del. quantity cm3/ 1000s.: 51.00...57.00 Start of delivery block Piston stroke mm: 1.4 Shutoff mm: +-0.02(0.04)electromagnet>Volt: 12 : D Outlet > Start: Injection-pump setting values Speed 1/min: 100 Del. quantity cm3/: 115.00...145.00 Test specifications in parentheses

mind>

1000s.: 130.0

Timing-device travel

Shutoff		+		
electromagnet>Volt:	12	+	Overlow quantity at	overflow valve:
•		+	,	
Inspection-pump tes	t specifications	+	1st speed 1/min:	500
Test specifications		+	Charge press. hPa:	
		1	Shutoff	
Timing-device chara	cteristic:	1	electromagnet>Volt:	12
The second secon		1	Overflow :	55.50 100.5
1st speed 1/min:	450	1	quantity> cm3/10s:	(40.50 115.5)
Charge press hPa:		1	2nd speed 1/min:	1250
To travel mm:	1 90 2 90	1	Charge press. hPa:	
TD travel mm: > mm:	(1.70 3.10)	Ι	Shutoff	1000
KSB/AFB	(1.70,	I	electromagnet>Volt:	12
valve > Volt:	10	T	Overflow :	
		T	quantity> cm3/10s:	
electromagnet>Volt:	0EU	T	quantity (1137 108)	(37.70131.10)
2nd speed 1/min:		T	No. 1 de la companya	handlerer about
Charge press hPa:	0.50 4.70	Ť	Delivery-quant. and	preakaway char.:
TD travel mm:	0.501.30 (0.201.60)	+		
	(0.201.60)	†	4	400
Shutoff	40	†	1nd speed 1/min:	
electromagnet>Volt:	12	+	Charge-air pressure	
3rd speed 1/min:		+	point> hPa:	
Charge press hPa:	1000	+	LDA-stroke mm:	-
TD travel mm: > mm:	1,602.00	+	Shutoff	
> mm:	(1.102.50)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	79.5081.50
electromagnet>Volt:	12	+		(76.0084.00)
4th speed 1/min:		+	2nd speed 1/min:	1500
	1000	+	Charge press. hPa:	1000
TD travel mm:	2.002.80	1	Shutoff	
> mm:	(1.703.10)	1	electromagnet Volt:	12
Shutoff		1	Del. quantity cm3/:	0.003.00
electromagnet>Volt:	12	1	> 1000s.:	(0.003.00)
account amagnos racer		1	3rd speed 1/min:	
Supply-pump pressur	e characteristic:	1	Charge press. hPa:	
ouppe, pump pressur	c ondidater factor	1	Shutoff	1000
1st speed 1/min:	500	1	electromagnet>Volt:	12
Charge press. hPa:		I	Del. quantity cm3/:	12 0 32 0
	1000	T	> 1000s.:	
Supply-pump	/ 10 / 70	T	4th speed 1/min:	
	4.104.70	T	Charge press. hPa:	1000
Shutoff	43	T	tharge press. nra:	1000
electromagnet>Volt:		Ť	Del. quantity cm3/:	
2nd speed 1/min:		†		(48.060.0)
<u> </u>	1000	†	5th speed 1/min:	
Supply-pump	F F0 / 40	+	Charge press. hPa:	1000
• • • • • • • • • • • • • • • • • • • •	5.506.10	†	Shutoff	40
Shutoff	•-	+	electromagnet>Volt:	
electromagnet>Volt:		+	Del. quantity cm3/:	
3rd speed 1/min:		+		(80.0086.00)
Charge press. hPa:	1000	+	6th speed 1/min:	
Supply-pump		+	Charge press. hPa:	1000
pressure> bar:	6.006.60	+	Shutoff	
Shutoff		+	electromagnet>Volt:	12
electromagnet>Volt:	12	+	Del. quantity cm3/:	
4th speed 1/min:		+	> 1000s.:	(80.087.0)
	1000	+	7th speed 1/min:	850
Supply-pump		+	Charge press. hPa:	
pressure> bar:	7.007.60	1	Shutoff	
Shutoff		+	electromagnet>Volt:	12
electromagnet>Volt:	12	1	Del. quantity cm3/:	80.081.0
	· <del>-</del>			

1000s.: (77.5...83.5) 1/min: 500 8th speed 4th speed 1/min: 100 Charge press. hPa: 1000 Shutoff Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 115.00...145.00 electromagnet>Volt: 12 Del. quantity cm3/: 90.50...100.5 1000s.: -1000s.: -Shutoff electromagnet: Mech. shutoff: Cut-in >min voltage : 10.0 1st speed 1/min: 1250 Rated voltage : 12.0 Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 Mounting and assembly dimensions: 1000s.: (0.00...3.00) Designation Shutoff mm: 3.6...3.8 electromagnet>volt: 12 KF mm: -Electr. shutoff: MS mm: -LDA stroke mm: mm: 34.5...38.5 1/min: 320 1st speed Ya Charge press. hPa: -Yb mm: 45.2...50.8 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Remarks: Shutoff electromagnet>volt: -Ya = Distance between VE flange and speed-control lever in idle Idle delivery: position 1st speed 1/min: 320 Measurement point = edge of control Shutoff lever on drive end electromagnet>Volt: 12 Del. quantity cm3/: 11.5...15.50 1000s.: (8.50...18.50) cm3/: 5.5 > Yb = Distance between VE flange and speed-control lever in rated speed Dispersion position 1000s.: (7.0) 1/min: 250 Measurement point = edge of control 2nd speed lever on distributor-head end Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 21.0...29.0 1000s.: (19.0...31.0) > 1/min: 400 3rd speed Shutoff Permissible port/port scatter with stop test, electrical = max. 5.0 electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 ccm/1000 S. 1000s.: (0.00...3.00) Permissible port/port scatter with Automatic starting fuel delivery: stop test, mechanical = max. 5.0 ccm/1000 S. 1/min: 130 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 130.00...170.00 1000s.: -2nd speed 1/min: 240 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 50.00...80.00

1000s.: -

AFB/AFB BOSCH-INJ.-PUMP TEST SPECIFICATIONS valve > Volt: 24 Shutoff Note inst. in remarks column electromagnet>Volt: 24 Test scheet : FIA Supply-pump pressure Edition : 27.02.96 1/min: 1000 replaces Speed : ISO-4113 hPa: 1000 Calibrating oil Charge press Setting value bar: 6.5...7.1 : VE6/12F1350R623-1 Injection pump KSB/AFB Type number : 0 460 426 252 valve > Volt: 24 Customer Part-No. : Shutoff electromagnet>Volt: 24 Customer-specific information Full-load del. with charge press.: : IVECO-FIAT Customer 1/min: 700 Speed : 8060.45.5200 EURO2 Charge press. hPa: 1000 Engine Del. quantity cm3/ 1000s.: 82.50...83.50 Power KW: 152 KSB/AFB Volt: 24 TEST BENCH REQUIREMENTS valve > Shutoff Overflow restricti: 1 463 456 303 electromagnet>Volt: 24 cm3/: 3.5 Dispersion 1000s.: (5.0) Calibrating-oil return>temp. > °C with>thermometer> : 54.00...56.00 Full-load del. w/out charge press.: 1/min: 500 Inlet press., bar : 0.30...0.40 Speed Del. quantity cm3/ 1000s.: 52.50...53.50 Calibrating nozzle-holder > : 1 688 901 027 11 KSB/AFB assembly> > Volt: 24 valve Shutoff Openina bar: 247.00...253.00 Pressure> electromagnet>Volt: 24 Low-idle speed regulation Perforated-plate diameter> mm: 0.5 1/min: 340 Speed Del. quantity cm3/ 1000s.: 13.0...17.0 Test inj. tubing : 1 680 750 073 > KSB/AFB > Volt: 24 Outside diameter : 6.00 valve x Wall>thickness : 2.00 Shutoff mm: 450 electromagnet>Volt: 24 x Length> Del. quantity cm3/: 4.0 1000s.: (5.0) Start of delivery Prestroke mm: -(from BDC): -Full-load speed regulation 1/min: 1450 Injection pump setting values Speed hPa: 1000 Test specifications in parentheses Charge press Del. quantity cm3/ 1000s.: 55.00...59.00 Timing-device travel KSB/AFB 1/min: 1050 > Volt: 24 valve Speed Charge press. hPa: 1000 Shutoff

electromagnet>Volt: 24

Setting value

mm: 2.10...2.30

	+	Supply-pump	
Start:	1		4.104.70
	+	KSB/AFB	
Speed 1/min: 100	+	valve > Volt:	24
Del. quantity cm3/: 60.00110.00	+	Shutoff	
mind> 1000s.: 60.0	+	electromagnet>Volt:	24
KSB/AFB	+	3rd speed 1/min:	1000
Valve > Volt: 24	+	Charge press. hPa:	1000
Shutoff	+	Supply-pump	
electromagnet>Volt: 24	+	•	6.507.10
	+	KSB/AFB	
Inspection-pump test specifications	+	valve > Volt:	24
Test specifications in parentheses	+	Shutoff	
	+	electromagnet>Volt:	
Timing-device characteristic:	+	4th speed 1/min:	
A	+	•	1000
1st speed 1/min: 950	+	Supply-pump	
Charge press hPa: 1000	+		8.409.00
TD travel mm: 0.901.50	+	KSB/AFB	
> mm: (0.501.90)	+	valve > Volt:	24
KSB/AFB	t	Shutoff	
valve > Volt: 24	+	electromagnet>Volt:	24
electromagnet>Volt: 24	+		
2nd speed 1/min: 1050	+	Overlow quantity at	overflow valve:
Charge press hPa: 1000	+		
TD travel mm: 2.102.30	+	1st speed 1/min:	500
> mm: (1.502.90)	+	Charge press. hPa:	1000
KSB/AFB	+	KSB/AFB	
valve > Volt: 24	+	valve > Volt:	24
Shutoff	+	Shutoff	
electromagnet>Volt: 24	+	electromagnet>Volt:	
3rd speed 1/min: 340	+		55.50100.5
Charge press hPa: 1000	+	quantity> cm3/10s:	(40.50115.5)
TD travel mm: 1.82.2 A	+	2nd speed 1/min:	
> mm: -	+	Charge press. hPa:	
KSB/AFB	+	KSB/AFB	
valve > Volt: -	1	valve > Volt:	24
Shutoff	+	Shutoff	
electromagnet>Volt: 24	1	electromagnet>Volt:	24
4th speed 1/min: 470	1		52.70136.10
Charge press hPa: 1000	1	quantity> cm3/10s:	
TD travel mm: 2.23.4 B	1	•	
> mm: -	1	Delivery-quant. and	breakaway char .:
KSB/AFB	+	• ,	•
valve > Volt: -	+		
Shutoff	+	1nd speed 1/min:	600
electromagnet>Volt: 24	+	Charge-air pressure-	-setting
	+	point> hPa:	
Supply-pump pressure characteristic:	+	LDA-stroke mm:	-
	+	KSB/AFB	
1st speed 1/min: 470	+	valve > Volt:	24
Charge press. hPa: 1000	+	Shutoff	
Supply-pump	+	electromagnet>Volt:	24
pressure> bar: 7.007.60	+	Del. quantity cm3/:	
KSB/AFB	+	> 1000s.:	(79.586.5)
valve > Volt: -	+	2nd speed 1/min:	
Shutoff	+	Charge press. hPa:	
electromagnet>Volt: 24	+	KSB/AFB	
2nd speed 1/min: 600	+	valve > Volt:	24
Charge press. hPa: 1000	1	Shutoff	
responding to the property of		•	

electromagnet Volt:		+	Electr. shutoff:	
Del. quantity cm3/: > 1000s.:	(0.003.00)	†	1st speed 1/min:	750
		T	Charge press. hPa:	
3rd speed 1/min: Charge press. hPa:		T	Del. quantity cm3/:	0 00 3 00
KSB/AFB	1000	I	> 1000s.:	(0.003.00)
valve > Volt:	2/	Τ	Shutoff	(0.003.00)
Shutoff	24	Ι	electromagnet>volt:	
electromagnet>Volt:	2/	Ι	etectromagnet/vott:	_
Del. quantity cm3/:		Ι	Idle delivery:	
	(21.033.0)	Ι	rate decivery.	
4th speed 1/min:		Ι	1st speed 1/min:	3/0
Charge press. hPa:		I	>KSB/AFB	340
KSB/AFB	1000	I	valve > Volt:	24
valve > Volt:	24	1	Shutoff	LT
Del. quantity cm3/:		1	electromagnet>Volt:	24
	(51.063.0)	1	Del. quantity cm3/:	
5th speed 1/min:		1	> 10005.:	(10.020.0)
Charge press. hPa:		1	Dispersion cm3/:	
KSB/AFB	1000	1	> 1000s.:	
valve > Volt:	24	1	2nd speed 1/min:	
Shutoff	E+	1	KSB/AFB	510
electromagnet>Volt:	24	1	valve > Volt:	24
Del. quantity cm3/:	86 n 90 n	1	Shutoff	C-T
	(84.591.5)	1	electromagnet>Volt:	24
6th speed 1/min:		1	Del. quantity cm3/:	
Charge press. hPa:		1	> 1000s.:	
KSB/AFB	.000	1	3rd speed 1/min:	
valve > Volt:	24	1	KSB/AFB	763
Shutoff	<b>C</b> +	1	valve > Volt:	24
electromagnet>Volt:	24	1	Shutoff	<b>-</b> 'T
Del. quantity cm3/:	79.082.0	1	electromagnet>Volt:	24
	(77.084.0)	1	Del. quantity cm3/:	
7th speed 1/min:		1		(0.003.00)
Charge press. hPa:		1		10.0010.00
SB/AFB	.000	1	Automatic starting 1	fuel delivery:
valve > Volt:	24	1		
Shutoff		1	1st speed 1/min:	200
electromagnet>Volt:	24	1	KSB/AFB	
Del. quantity cm3/:		1	valve > Volt:	24
> 1000s.:	(79.586.5)	1	Shutoff	
3th speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:		+	Del. quantity cm3/:	75.0125.0
(SB/AFB		+	> 1000s.:	-
valve > Volt:	24	+		
Shutoff		+	2nd speed 1/min:	350
electromagnet>Volt:	24	+	KSB/AFB	
Del. quantity cm3/:		+	<pre>valve &gt; Volt:</pre>	24
	(83.090.0)	+	Shutoff	
th speed 1/min:		+	electromagnet>Volt:	24
harge press. hPa:	_	+	Del. quantity cm3/:	
(SB/AFB		+	> 1000s.:	
valve > Volt:	24	+		
Shutoff		+	4th speed 1/min:	100
electromagnet>Volt:	24	+	KSB/AFB	
el. quantity cm3/:		+	valve > Volt:	24
	(49.556.5)	+	Shutoff	
		+	electromagnet>Volt:	24
		+	Del. quantity cm3/:	60.00110.00
		+	> 1000s.:	

## Shutoff electromagnet:

Cut-in

>min voltage : 20.0 Rated voltage : 24.0

# Mounting and assembly dimensions:

Designation

K mm: 3.5...3.7

KF mm: -

MS1 mm: 1.3...1.6

LDA stroke mm: -

Ya mm: 37.9...39.9 Yb mm: 41.4...46.6

#### Remarks:

:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Timing-device travel BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1100 Charge press. hPa: 1000 Note inst. in remarks column Setting value mm: 1.60...2.00 : CDC Test scheet Shutoff : 12.02.96 Edition electromagnet>Volt: 24 replaces Calibrating oil : ISO-4113 Supply-pump pressure Injection pump : VE6/12F125OR671 Type number : 0 460 426 254 Speed 1/min: 1100 Charge press hPa: 1000 Customer Part-No.: 3 282 755 Setting value bar: 6.70...7.30 Shutoff Customer-specific information electromagnet>Volt: 24 Customer : CDC EURO2 Full-load del. with charge press.: : 6 BTAA 5,9 B DI Engine 1/min: 850 Speed Charge press. hPa: 1000 KW: 96 Power 1/min: 2500 Del. quantity cm3/ Speed 1000s.: 81.00...82.00 TEST BENCH REQUIREMENTS Shutoff electromagnet>Volt: 24 Overflow restricti: 1 463 456 303 Dispersion cm3/: 5.0 1000s.: (5.0) Calibrating-oil return>temp. > °C Full-load del. w/out charge press.: with>thermometer> : 44.00...46.00 Speed 1/min: 500 Inlet press., bar : 0.30...0.40 Del. quantity cm3/ 1000s.: 65.0...66.0 Calibrating nozzle-holder Shutoff : 1 688 901 109 assembly> electromagnet>Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0) Opening | bar: 204.00...210.00 Pressure> Low-idle speed regulation Perforated-plate diameter> mm: 0.5 Speed 1/min: 300 Del. quantity cm3/ 1000s.: 7.5...11.5 Test inj. tubing : 1 680 750 017 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 5.5 Outside diameter : 6.00 1000s.: (7.0) x Wall>thickness : 2.00 x Length> mm: 840 Full-load speed regulation Start of delivery 1/min: 1400 Prestroke mm: -Charge press hPa: 1000 Del. quantity cm3/ > (from BDC): -1000s.: 33.5...39.5 Start of delivery block Piston stroke mm: 1.4 mm: +-0.02(0.06) Shutoff electromagnet>Volt: 24 : D Outlet > Start: Injection pump setting values Test specifications in parentheses 1/min: 100 Speed Charge press hPa: -

Del. quantity cm3/: mind> 1000s.:	70.0100.0	†	1st speed 1/min:	500
Shutoff	70.0	I	Charge press. hPa:	
electromagnet>Volt:	24	1	Shutoff	
_		+	electromagnet>Volt:	
Inspection-pump tes		+	Overflow :	
Test specifications	in parentheses	+	quantity> cm3/10s:	
Timing-device chara	otanictic:	1	2nd speed 1/min: Charge press. hPa:	
i ming device chara	cteristic.	I	Shutoff	1000
1st speed 1/min:	450	+	electromagnet>Volt:	24
Charge press hPa:	-	+	Overflow :	44.40100.00
	1.802.80	+	quantity> cm3/10s:	(29.40115.00)
	(1.603.00)	†	Naldijani, mirak and	h
KSB/AFB valve > Volt:	2/.	Ī	Delivery-quant. and	preakaway char.:
electromagnet>Volt:		I		
2nd speed 1/min:		+	1nd speed 1/min:	600
Charge press hPa:	1000	+	Charge-air pressure	
TD travel mm:	1.501.70	+	point> hPa:	300
> mm:	-	+		5.3
Shutoff	24	†	Shutoff	21
electromagnet>Volt: 3rd speed 1/min:	24 1100	Ť	<pre>electromagnet&gt;Volt: Del. quantity cm3/:</pre>	24 23 50 74 50
	1000	I		(70.0078.00)
	1.62.0	1	2nd speed 1/min:	
	(1.12.5)	+	Charge press. hPa:	1000
Shutoff		+	Shutoff	
electromagnet>Volt:	24	<del>╇╺╇</del> ╌╇╌╇╌╇╌╇╌╇╌╇╌╇╌╇╌╇	electromagnet Volt:	
4th speed 1/min:		†	Del. quantity cm3/:	
Charge press hPa: TD travel mm:	1.902.70	Ī	> 1000s.: 3rd speed 1/min:	(0.003.00)
	(1.603.00)	I	Charge press. hPa:	
Shutoff		+	Shutoff	
electromagnet>Volt:	24	+	electromagnet>Volt:	
		+	Del. quantity cm3/:	
Supply-pump pressure	e characteristic:	†	> 1000s.:	
1st speed 1/min:	500	Ť	4th speed 1/min: Charge press. hPa:	
Charge press. hPa:		I	Shutoff	1000
Supply-pump		1	electromagnet>Volt:	24
	4.204.80	+	Del. quantity cm3/:	
> bar:	-	+		(30.542.5)
Shutoff	2,	+	5th speed 1/min:	
electromagnet>Volt:		†	Charge press. hPa: Shutoff	1000
2nd speed 1/min: Charge press. hPa:		I	electromagnet>Volt:	24
Supply-pump	7000	1	Del. quantity cm3/:	
pressure> bar:	6.707.30	+		(81.087.0)
> bar:	-	+	6th speed 1/min:	
Shutoff		+	Charge press. hPa:	-
electromagnet>Volt:		†	Shutoff	71
3rd speed 1/min: Charge press. hPa:		Ī	<pre>electromagnet&gt;Volt: Del. quantity cm3/:</pre>	
Charge press. hPa: Supply-pump	1000	I		(61.569.5)
	7.408.00	1	7th speed 1/min:	
Shutoff		+	Charge press. hPa:	
electromagnet>Volt:	24	+	Shutoff	•
		†	electromagnet>Volt:	
Overlow quantity at	overtiow valve:	+	Del. quantity cm3/:	01.U82.U

1000s.: (78.5...84.5) > Mech. shutoff: 1st speed 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: 24 Electr. shutoff: 1st speed 1/min: 300 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1/min: 300 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 7.5...11.5 1000s.: (4.5...14.5) cm3/: 5.5 Dispersion 1000s.: (7.0) > 1/min: 370 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 80.0...120.0 1000s.: -1/min: 210 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 60.0...90.0 1000s.: -Shutoff electromagnet: Cut-in >min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.6...3.8

M10

KF mm: 6.2...6.6 MS1 mm: 1.0..1.25 LDA stroke ya mm: 34.8...38.8 mm: 43.0...48.6

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

:

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : CDC Edition : 26.02.96 replaces Calibrating oil : ISO-4113 Injection pump : VE6/12F1250R498-8 Type number : 0 460 426 256 Customer Part-No. : Customer-specific information Customer : CDC : 6 BTAA 5,9 B DI Engine Power KW: 118 1/min: 2500 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 44.00...46.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 109 assembly> Opening Pressure> bar: 204.00...210.00 Perforated-plate diameter> mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840 x Length> Start of delivery Prestroke mm: --(from BDC): -Start of delivery block

mm: 1.4

: D

Injection-pump setting values

Test specifications in parentheses

mm: +-0.02(0.06)

1/min: 1100 Speed Charge press. hPa: 1000 Setting value mm: 1.50...1.90 Shutoff electromagnet>Volt: 12 Supply-pump pressure 1/min: 1100 Speed Charge press hPa: 1000 Setting value bar: 6.30...6.90 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 850 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 84.00...85.00 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 5.0 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000s.: 70.5...71.5 Shutoff electromagnet>Volt: 12 cm3/: 5.0 Dispersion 1000s.: (5.0) Low-idle speed regulation 1/min: 350 Speed Del. quantity cm3/ 1000s.: 6.0...10.0 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0) Full-load speed regulation 1/min: 1380 Speed hPa: 1000 Charge press Del. quantity cm3/ 1000s.: 57.5...63.5 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed

Timing-device travel

Piston stroke

Outlet >

Charge press hPa: -	+		7.37.9
Del. quantity cm3/: 70.0100.0	+	Shutoff	40
mind> 1000s.: 70.0	†	electromagnet>Volt:	12
Shutoff	†	0	
electromagnet>Volt: 12	1	Overlow quantity at	overflow valve:
Inspection-pump test specifications	1	1st speed 1/min:	500
Test specifications in parentheses	+	Charge press. hPa:	
The second secon	1	Shutoff	
Timing-device characteristic:	+	electromagnet>Volt:	12
	+	Overflow :	
1st speed 1/min: 450	1	quantity> cm3/10s:	
Charge press hPa: -	1	2nd speed 1/min:	
TD travel mm: 1.902.90	+	Charge press. hPa:	
> mm: (1.703.10)	1	Shutoff	
KSB/AFB	1	electromagnet>Volt:	12
valve > Volt: 12	1	Overflow :	
electromagnet>Volt: 12	1	quantity> cm3/10s:	
2nd speed 1/min: 850	1	quario, ty	
Charge press hPa: 1000	1	Delivery-quant. and	hreakaway char :
TD travel mm: 0.301.10	1	beervery quarrer area	Di Cananay Cita 12
> mm: (0.001.40)	1		
Shutoff	1	1nd speed 1/min:	600
electromagnet>Volt: 12	1	Charge-air pressure	
3rd speed 1/min: 1000	1	point> hPa:	
Charge press hPa: 1000	1	LDA-stroke mm:	
TD travel mm: 1.51.9	1	Shutoff	
> mm: (1.02.4)	Ι	electromagnet>Volt:	12
Shutoff	Ι	Del. quantity cm3/:	70 00 80 00
electromagnet>Volt: 12	Ι		(75.5083.50)
4th speed 1/min: 1250	Ι	2nd speed 1/min:	
Charge press hPa: 1000	T	Charge press. hPa:	
TD travel mm: 2.002.80	T	Shutoff	1000
TD travel mm: 2.002.80 mm: (1.703.10)	Τ	electromagnet Volt:	10
Shutoff	T	Del. quantity cm3/:	0 00 3 00
electromagnet>Volt: 12	T	> 1000s.:	(0.003.00)
etectromagnet/vott: 12	T	3rd speed 1/min:	
Supply-pump pressure characteristic:	I	Charge press. hPa:	
supply—pump pressure characteristic.	Ι	Shutoff	1000
1st speed 1/min: 500	Ι	electromagnet>Volt:	12
	I	Del. quantity cm3/:	12 0 32 0
Charge press. hPa: 1000 Supply-pump	Ι	> 1000s.:	
pressure> bar: 4.104.70	Ι	4th speed 1/min:	
Shutoff	Ι	Charge press. hPa:	
electromagnet>Volt: 12	1	Shutoff	1000
2nd speed 1/min: 850	$\mathbf{I}$	electromagnet>Volt:	12
Charge press. hPa: 1000	Ι	Del. quantity cm3/:	57 5 63 5
Supply-pump	Ι		(54.566.5)
pressure> bar: 5.906.50	Ι	5th speed 1/min:	
Shutoff	Ι	Charge press. hPa:	
electromagnet>Volt: 12	Ι	Shutoff	1000
3rd speed 1/min: 1000	Ι	electromagnet>Volt:	12
	1	Del. quantity cm3/:	82 5 85 5
<b>—</b> ,	Ι	> 1000s.:	(81.087.0)
Supply-pump pressure> bar: 6.306.90	Ι	6th speed 1/min:	
pressure> bar: 6.306.90 Shutoff	I	Charge press. hPa:	
	I	Shutoff	
electromagnet>Volt: 12 4th speed 1/min: 1250	I	electromagnet>Volt:	12
	I	Del. quantity cm3/:	
	I		(67.075.0)
Supply-pump	T	- 10003.:	(01.07)

7th speed 1/min: 850 Charge press. hPa: 1000 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 84.0...85.0 1000s.: (81.5...87.5) Mech. shutoff: 1/min: 1250 1st speed Charge press. hPa: 1000 Del. quantity cm3/: 0.0...3.0 1000s.: -> Shutoff electromagnet>volt: 12 Electr. shutoff: 1st speed 1/min: 350 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) > Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 6.0...10.0 1000s.: (3.0...13.0) cm3/: 5.5 Dispersion 1000s.: (7.0) 2nd speed 1/min: 410 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 75.0...115.0 1000s.: -1/min: 240 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 65.0...95.0 1000s.: -Shutoff electromagnet: Cut-in : 10.0 >min voltage

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8 KF mm: 6.2...6.6 MS1 mm: 1.2..1.35 Ya mm: 34.8...38.8 Yb mm: 43.8...49.4

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

4

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Rated voltage : 12.0

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : CDC : 26.02.96 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1250R373-8 Type number : 0 460 426 257

Customer Part-No.: 3 930 172

Customer-specific information

Customer : CDC

Engine : 6 BTA 590 DI

Power KW: 130 Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer>: 44.00...46.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly>

Opening |

bar: 247.00...253.00 Pressure>

Perforated-plate

diameter> mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 840

Start of delivery

mm: 0.3 Prestroke

> (from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.85

mm: +-0.02(0.06)>

: D Outlet >

Injection-pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 750 Charge press. hPa: 1000

Setting value mm: 1.30...1.70

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

Speed 1/min: 750 Charge press hPa: 1000

Setting value bar: 3.20...3.80

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

Speed 1/min: 750 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 84.50...85.50

Shutoff

electromagnet>Volt: 24 Dispersion cm3/: 4.0 1000s.: (4.5) >

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 68.5...69.5

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/

> 1000s.: 8.0...14.0

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

1/min: 1300 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 59.0...65.0

electromagnet>Volt: 24

Start:

1/min: 100 Speed hPa: -Charge press

Del. quantity cm3/: 70.0...130.0

1000s.: 70.0

Shutoff electromagnet>Volt:	24	‡	quantity> cm3/10s: (29.40115.00)
		+	Delivery-quant. and breakaway char.:
Inspection-pump test Test specifications		+	
Timing-device charac	cteristic:	‡	1nd speed 1/min: 700 Charge-air pressure-setting
1st speed 1/min:	600	1	point> hPa: 400 LDA-stroke mm: -
Charge press hPa:		1	Shutoff
TD travel mm:	0.401.20	1	electromagnet>Volt: 24
> mm:	(0.101.50)	4	Del. quantity cm3/: 77.5078.50
electromagnet>Volt:		1	> 1000s.: (74.0082.00)
2nd speed 1/min:	750	+	2nd speed 1/min: 1400
	1000	+	Charge press. hPa: 1000
TD travel mm:	1.301.70	+	Shutoff
> mm:	(0.802.20)	+	electromagnet Volt: 24
Shutoff		+	Del. quantity cm3/: 0.003.00
electromagnet>Volt:	24	+	> 1000s.: (0.003.00)
3rd speed 1/min:		+	3rd speed
Charge press hPa:		+	Charge press. hPa: 1000
TD travel mm:	2.23.0	+	Shutoff
> mm:	(1.93.3)	+	electromagnet>Volt: 24
Shutoff		+	Del. quantity cm3/: 18.058.0
electromagnet>Volt:	24	+	> 1000s.: -
•		+	4th speed 1/min: 1300
Supply-pump pressure	e characteristic:	‡	Charge press. hPa: 1000 Shutoff
1st speed 1/min:	500	+	electromagnet>Volt: 24
Charge press. hPa:		+	Del. quantity cm3/: 59.065.0
Supply-pump		+	> 1000s.: (56.068.0)
pressure> bar:-	2.202.80	+	5th speed
Shutoff		+	Charge press. hPa: 1000
electromagnet>Volt:	24	+	Shutoff
2nd speed 1/min:		1	electromagnet>Volt: 24
Charge press. hPa:		1	Del. quantity cm3/: 76.579.5
Supply-pump		1	> 1000s.: (75.081.0)
pressure> bar:	3.203.80	1	6th speed 1/min: 1050
Shutoff		1	Charge press. hPa: 1000
electromagnet>Volt:	24	1	Shutoff
3rd speed 1/min:		1	electromagnet>Volt: 24
Charge press. hPa:		1	Del. quantity cm3/: 80.083.0
Supply-pump		1	> 1000s.: (78.085.0)
	4.505.10	1	7th speed 1/min: 500
Shutoff	1123111211	1	Charge press. hPa: -
electromagnet>Volt:	24	1	Shutoff
ctopet cuinding to to total	2.	1	electromagnet>Volt: 24
Overlow quantity at	overflow valve:	1	Del. quantity cm3/: 68.569.5
over tow quality of	over reon vacve.	1	> 1000s.: (65.073.0)
1st speed 1/min:	500	$\mathbf{I}$	8th speed 1/min: 750
		$\mathbf{I}$	Charge press. hPa: 1000
Charge press. hPa: Shutoff		I	Shutoff
	2/	Ι	electromagnet>Volt: 24
<pre>electromagnet&gt;Volt: Overflow :</pre>	37.5082.00	I	Del. quantity cm3/: 84.585.5
quantity> cm3/10s:		I	> 1000s.: (82.088.0)
		I	/ 10000 (02.000.0)
2nd speed 1/min:		T	
Charge press. hPa:	1000	T	Mech. shutoff:
Shutoff	2/	T	medit. Shutoff:
electromagnet>Volt:		T	1st speed 1/min: 1250
Overflow :	44.40100.00	T	1st speed 1/min: 1250

Charge press. hPa: 1000 Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: 24 Electr. shutoff: 1/min: 375 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 8.0...14.0 1000s.: (6.0...16.0) cm3/: 5.5Dispersion 1000s.: (7.0) 1/min: 500 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...4.00 1000s.: (0.00...4.00) Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 80.0...140.0 1000s.: -1/min: 450 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 48.0...88.0 1000s.: ~ Shutoff electromagnet: Cut-in : 10.0 >min voltage : 12.0 Rated voltage Mounting and assembly dimensions: Designation K mm: mm: 5.0...5.4 KF MS1 mm: 1.4...1.7 mm: 6.0 SVS max. LDA stroke mm: mm: 34.8...38.8 Ya

mm: 42.8...48.2

Yb

M16

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

: MAN Test scheet : 27.02.96 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1200R496-1

Type number : 0 460 426 258

Customer Part-No. :

Customer-specific information

Customer : MAN

: D 0826 LF07 DI Engine

KW: 140 Power

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly>

Opening

bar: 247.00...253.00 Pressure>

Perforated-plate

mm: 0.5 diameter>

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 840

x Length>

Start of delivery

mm: 0.3 Prestroke

(from BDC): +-0.02(0.04)

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 850 Speed Charge press. hPa: 1000 Setting value mm: 2.00...2.40

Shutoff

electromagnet>Volt: 24

Supply-pump pressure

1/min: 850 Speed Charge press hPa: 1000

Setting value bar: 7.30...7.90

Shutoff

electromagnet>Volt: 24

Full-load del. with charge press.:

1/min: 1000 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 91.50...92.50

Shutoff

electromagnet>Volt: 24 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 59.5...60.5 >

Shutoff

electromagnet>Volt: 24

Low-idle speed regulation

Speed 1/min: 250

Del. quantity cm3/

1000s.: 16.5...23.5

Shutoff

electromagnet>Volt: 24 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 1280 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 62.0...68.0

Shutoff

electromagnet>Volt: 24

Start:

1/min: 100 Speed

Charge press hPa: -

Del. quantity cm3/: 60.0...100.0

mind> 1000s.: 60.0

Shutoff

electromagnet>Volt: 24

Inspection-pump test specifications

M17

Test specifications	in parentheses	+		
		+	1nd speed 1/min:	
Timing-device chara	acteristic:	†	Charge-air pressure	
1 - t 1	750	†	point> hPa:	
1st speed 1/min:	: /DU : 1000	†		7.5
Charge press hPa:		†	Shutoff	21
	0.601.40 (0.301.70)	†	electromagnet>Volt:	
		Ť	Del. quantity cm3/: > 1000s.:	
electromagnet>Volt: 2nd speed 1/min:		T		(90.5095.50)
Charge press hPa:		T		
Th the column to	2 NR 2 NA	T	Charge press. hPa: Shutoff	1000
TD travel mm:	(1.502.90)	T	electromagnet Volt:	2/.
Shutoff """.	(1.302.70)	Ι	Del. quantity cm3/:	
electromagnet>Volt:	24	Ι		(0.003.00)
3rd speed 1/min:		Ι	3rd speed 1/min:	
	1000	Ι	Charge press. hPa:	
TD travel mm:	2.93.7	Ι	Shutoff	1000
> mm:	(2.64.0)	1	electromagnet>Volt:	24
Shutoff	(2.04.0)	1	Del. quantity cm3/:	
electromagnet>Volt:	24	1	> 1000s.:	
etectionagnet-vote.	<b>C</b> 4	1	4th speed 1/min:	
Supply-pump pressur	e characteristic:	1	Charge press. hPa:	
oabbey bamb bi cood.	0 01141 40001 700101	1	Shutoff	1000
1st speed 1/min:	500	1	electromagnet>Volt:	24
Charge press. hPa:		1	Del. quantity cm3/:	30.056.0
Supply-pump	, 555	1	> 1000s.:	
pressure> bar:	5.506.10	1	5th speed 1/min:	
Shutoff		1	Charge press. hPa:	
electromagnet>Volt:	24	1	Shutoff	
2nd speed 1/min:		1	electromagnet>Volt:	24
Charge press. hPa:		1	Del. quantity cm3/:	
Supply-pump		1	> 1000s.:	(60.569.5)
pressure> bar:	7.307.90	+	6th speed 1/min:	
Shutoff		+	Charge press. hPa:	
electromagnet>Volt:	24	+	Shutoff	
3rd speed 1/min:		+	electromagnet>Volt:	24
Charge press. hPa:	1000	+	Del. quantity cm3/:	
Supply-pump		+	> 1000s.:	(85.493.4)
pressure> bar:	9.009.60	+	7th speed 1/min:	800
Shutoff		+	Charge press. hPa:	1000
electromagnet>Volt:	24	+	Shutoff	
		+	electromagnet>Volt:	
Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	
		†		(90.698.6)
1st speed 1/min:		+	8th speed 1/min:	
Charge press. hPa:	_	+	Charge press. hPa:	1000
Shutoff	<b>~</b> .	+	Shutoff	•
electromagnet>Volt:		+	electromagnet>Volt:	
	37.5082.00	†	Del. quantity cm3/:	
quantity> cm3/10s:		†		(97.0105.0)
2nd speed 1/min:		†	9th speed 1/min:	
Charge press. hPa:	TUUU	<b>T</b>	Charge press. hPa:	ruuu
Shutoff	2/	<b>T</b>	Shutoff	2/
electromagnet>Volt:		T	electromagnet>Volt:	
	44.40100.00	T	Del. quantity cm3/:	
quantity> cm3/10s:	(27,40) (3,00)	I		(100.6112.6)
Delivery-quant. and	hroakauay chan •	I	10th speed 1/min:	
verivery-quant. and	Di Cakaway Cilat	I	Charge press. hPa:	

electromagnet>Volt: 24
Del. quantity cm3/: 59.5...60.5 1000s.: (57.5...62.5) 11th speed 1/min: 1000 Charge press. hPa: 1000 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 91.5...92.5 1000s.: (89.5...94.5) Mech. shutoff: 1st speed 1/min: 1200 Charge press. hPa: 1000 Del. quantity cm3/: 0.0...3.0 1000s.: -Shutoff electromagnet>volt: 24 Electr. shutoff: 1st speed 1/min: 250 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet>volt: -Idle delivery: 1st speed 1/min: 250 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 16.5...23.5 1000s.: (14.5...25.5) cm3/: 6.0Dispersion 1000s.: (6.5) 1/min: 400 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 330 Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 70.0...100.0 1000s.: -1/min: 430 2nd speed Shutoff electromagnet>Volt: 24 Del. quantity cm3/: 40.0...70.0 1000s.: -

Cut-in >min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Shutoff electromagnet:

Note inst. in remarks column

Test scheet : PEU

: 11.03.96 Edition

: replaces

Calibrating oil : ISO-4113

Injection pump : VE4/8F2500R611-1

: 0 460 484 099 Type number

Customer Part-No. :

Customer-specific information

Customer : PSA

: TUD 5-L3 Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening

bar: 127.00...133.00 Pressure>

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length> mm: 450

Start of delivery

Prestroke mm: -

> (from BDC): -

Start of delivery block

Piston stroke mm: 0.8

: A Outlet >

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed

Setting value mm: 4.80...5.20

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1500

Setting value bar: 6.00...6.60

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500

Del. quantity cm3/

1000s.: 23.5...24.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/

1000s.: 11.0...13.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/

1000s.: 1.5...2.5

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2650

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet>Volt: 12

Start:

1/min: 200

Del. quantity cm3/: 39.00...41.00 mind> 1000s.; 32.50

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 800

TD travel mm: 1.20...2.00

> mm: (0.902.30) +	Del. quantity cm3/: 10.014.0
electromagnet>Volt: 12	> 1000s.: (8.016.0)
2nd speed 1/min: 1500 +	3rd speed 1/min: 2580
TD travel mm: 4.805.20	Shutoff
> mm: (4.305.70)	electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 17.023.0
electromagnet>Volt: 12	> 1000s.: (15.025.0)
3rd speed 1/min: 2200 +	4th speed 1/min: 2450
TD travel mm: 7.908.70	Shutoff
> mm: (7.609.00)	electromagnet>Volt: 12
Shutoff +	Del. quantity cm3/: 25.027.0
electromagnet>Volt: 12 +	> 1000s.: (24.828.2)
4th speed 1/min: 2450 +	5th speed 1/min: 1500
TD travel mm: 9.5010.1	Shutoff
> mm: - +	electromagnet>Volt: 12
Shutoff +	Del. quantity cm3/: 23.5024.50
electromagnet>Volt: 12	> 1000s.: (21.8026.20)
<del>-</del>	6th speed 1/min: 600
Supply-pump pressure characteristic:	Shutoff
	electromagnet>Volt: 12
1st speed 1/min: 800	Del. quantity cm3/: 24.027.0
Supply-pump	> 1000s.: (22.528.5)
pressure> bar: 4.304.90	7 10000:: (22.3:::20.3)
Shutoff	
electromagnet>Volt: 12	TI
2nd speed 1/min: 1500 +	Electr. shutoff:
Supply-pump +	4
pressure> bar: 6.006.60 +	1st speed 1/min: 350
Shutoff +	Del. quantity cm3/: 0.003.00
electromagnet>Volt: 12	> 1000s.: (0.003.00)
3rd speed 1/min: 2200 +	Shutoff
Supply-pump +	electromagnet>volt: -
pressure> bar: 7.808.40	_
Shutoff	Damper set qty.:
electromagnet>Volt: 12	- ampa-
	LFG-setting:
Overlow quantity at overflow valve:	a. a carag.
	Idle delivery:
1st speed 1/min: 600 +	rate detivery.
Shutoff +	1st speed 1/min 330
electromagnet>Volt: 12	Shutoff
Overflow : 41.7086.10 +	electromagnet Volt: 12
quantity> cm3/10s: (26.70101.10)	Del. quantity cm3/: 11.013.0
2nd speed 1/min: 2450 +	> 1000s.: (8.016.0)
Shutoff	Dispersion cm3/: 2.0
electromagnet>Volt: 12 +	> 1000s.: (3.0)
Overflow : 55.60139.00 +	
quantity> cm3/10s: (40.60154.00)	High Idle:
+	
Delivery-quant. and breakaway char.:	1st speed
+	Shutoff
1	electromagnet>Volt: 12
1nd speed 1/min: 2800	Del. quantity cm3/: 11.013.0
Shutoff	> 1000s.: (8.016.0)
electromagnet>Volt: 12	- 1000011 (0.01111010)
Del. quantity cm3/: 0.003.00	Rest delivery:
10000 (0.00 7.00)	nest detivery.
> 1000s.: (0.003.00) +	10+ 0000d 1/min. E00
2nd speed	1st speed 1/min: 500
Shutoff	Shutoff
electromagnet Volt: 12 +	electromagnet>Volt: 12

Del. quantity cm3/: 1.5...2.5 1000s.: (0.0...4.0) Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 1000 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 14.3...16.3 > 1000s.: (11.3...19.3) Automatic starting fuel delivery: 1st speed 1/min: 340 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 12.5...32.5 1000s.: -2nd speed 1/min: 250 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 35.0...69.0 1000s.: -4th speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 39.00...41.00 1000s.: (32.5...47.5) Shutoff electromagnet: Cut-in >min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 K KF mm: -MS mm: 0.8...1.2 mm: 32.0...36.0 Ya mm: 52.9...61.9 Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle Measurement point = edge of control Lever on drive end

Note inst. in remarks column

: PEU Test scheet

: 11.03.96 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/8F2500R611-2

Type number : 0 460 484 100

Customer Part-No. :

Customer-specific information

Customer : PSA

Engine : TUD 5-L3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening

bar: 127.00...133.00 Pressure>

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length> mm: 450

Start of delivery

Prestroke mm: -

> (from BDC): -

Start of delivery block

Piston stroke mm: 0.8

: A

Outlet >

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed

Setting value mm: 4.80...5.20

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1500

Setting value bar: 6.00...6.60

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

1/min: 1500 Speed

Del. quantity cm3/

1000s.: 23.5...24.5

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/

1000s.: 11.0...13.0

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/

> 1000s.: 1.5...2.5

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2650

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 200

Del. quantity cm3/: 39.00...41.00

mind> 1000s.: 32.50

Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 800 1st speed

mm: 1.20...2.00 TD travel

> mm: electromagnet>Volt:	(0.902.30)	+ Del. quantity cm3/: 10.014.0 + > 1000s.: (8.016.0)
2nd speed 1/min:		3rd speed 1/min: 2580
TD travel mm:	4.805.20	+ Shutoff
> mm: Shutoff	(4.305.70)	+ electromagnet>Volt: 12 + Del. quantity cm3/: 17.023.0
electromagnet>Volt:	12	+ > 1000s.: (15.025.0)
3rd speed 1/min:	2200	+ 4th speed 1/min: 2450
	7.908.70 (7.609.00)	+ Shutoff + electromagnet>Volt: 12
Shutoff	(7.007.00)	Del. quantity cm3/: 25.027.0
electromagnet>Volt:		+ > 1000s.: (24.828.2)
4th speed 1/min: TD travel mm:	2450 9.5010.1	+ 5th speed 1/min: 1500 + Shutoff
> mm:		+ electromagnet>Volt: 12
Shutoff		+ Del. quantity cm3/: 23.5024.50
electromagnet>Volt:	12	+ > 1000s.: (21.8026.20) + 6th speed 1/min: 600
Supply-pump pressur	e characteristic:	+ 6th speed 1/min: 600 + Shutoff
		+ electromagnet>Volt: 12
1st speed 1/min: Supply—pump	600	+ Del. quantity cm3/: 24.027.0 + > 1000s.: (22.528.5)
pressure> bar:	4.304.90	+
Shutoff		†
electromagnet>Volt: 2nd speed 1/min:	12 1500	† Electr. shutoff:
Supply-pump	1500	+ Leetti . Silutoi i .
pressure> bar:	6.006.60	1st speed 1/min: 350
Shutoff	12	+ Del. quantity cm3/: 0.003.00 + > 1000s.: (0.003.00)
electromagnet>Volt: 3rd speed 1/min:		+ Shutoff
Supply-pump		+ electromagnet>volt: -
pressure> bar: Shutoff	7.808.40	+ Nampon set atv :
electromagnet>Volt:	12	+ Damper set qty.: +
_		LFG-setting:
Overlow quantity at	overflow valve:	+ + Idle delivery:
1st speed 1/min:	600	Tidle delivery:
Shutoff		1st speed 1/min: 350
<pre>electromagnet&gt;Volt: Overflow :</pre>	12 41.7086.10	+ Shutoff + electromagnet Volt: 12
quantity> cm3/10s:		Del. quantity cm3/: 11.013.0
2nd speed 1/min:	2450	+ > 1000s.: (8.016.0)
Shutoff electromagnet>Volt:	12	+ Dispersion cm3/: 2.0 + > 1000s.: (3.0)
	55.60139.00	10000: (3.0)
quantity> cm3/10s:	(40.60154.00)	High Idle:
Delivery-quant. and	hreakaway chan	† 1st speed
becavery quarter and	or caraway char	Shutoff
		electromagnet>Volt: 12
<pre>1nd speed 1/min: Shutoff</pre>	2000	+ Del. quantity cm3/: 11.013.0 + > 1000s.: (8.016.0)
electromagnet>Volt:	12	1000011 (0.01110.0)
Del. quantity cm3/:	0.003.00	Rest delivery:
> 1000s.: 2nd speed 1/min:	(0.003.00)	† 1st speed
Shutoff	-	Shutoff
electromagnet Volt:	12	electromagnet>Volt: 12

Del. quantity cm3/: 1.5...2.5 1000s.: (0.0...4.0) Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) mm: 12.0 Spacing 1/min: 1000 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 14.3...16.3 1000s.: (11.3...19.3) Automatic starting fuel delivery: 1/min: 340 1st speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 12.5...32.5 1000s.: -1/min: 250 2nd speed Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 35.0...69.0 1000s.: -4th speed 1/min: 200 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 39.00...41.00 1000s.: (32.5...47.5) Shutoff electromagnet: Cut-in : 10.0 >min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 Κ KF mm: mm: 0.8...1.2 MS mm: 32.0...36.0 Ya mm: 52.9...61.9 Yb Remarks: : Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end

Note inst. in remarks column

Test scheet : REN

Edition : 11.03.96

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/8F2300R652

Type number : 0 460 484 103

Customer Part-No. :

Customer-specific information

Customer : RENAULT

Engine : F8Q-646

Power KW: 45

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return>temp. > °C

with>thermometer> : 40.00...48.00

Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening |

Pressure> bar: 127.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length> mm: 450

A Congent

Start of delivery

Prestroke mm: -

> (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 3.50...3.90

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.10...5.70

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

> 1000s.: 31.0...32.0

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.5

> 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 410

Del. quantity cm3/

> 1000s.: 7.50...11.5

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.5

> 1000s.: (2.5)

Residual-Delivery Setting

Speed 1/min: 500

Del. quantity cm3/

> 1000s.: 2.5...3.5

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2450

Del. quantity cm3/

> 1000s.: 21.50...27.50

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.0...60.0

mind> 1000s.: 40.0

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/

difference> 1000s.: - 6.5...12.5 *

Shutott

electromagnet>Volt: 12
TD-travel dif.measurement

1/min: 1250 1/min: 2950 1.Speed 1nd speed TD-travel Shutoff mm: -0.6...0.8 *difference> electromagnet>Volt: 12 Del. quantity cm3/: 0.00...5.00 Shutoff 1000s.: (0.00...5.00) 1/min: 2650 electromagnet>Volt: 12 2nd speed Inspection-pump test specifications Shutoff Test specifications in parentheses electromagnet Volt: 12 Del. quantity cm3/: 5.5...13.5 1000s.: (4.5...14.5) Timing-device characteristic: 3rd speed 1/min: 2450 1/min: 600 Shutoff 1st speed mm: 0.80...1.60 TD travel electromagnet>Volt: 12 Del. quantity cm3/: 21.5...27.5 mm: (0.60...1.80) electromagnet>Volt: 12 1000s.: (20.5...28.5) 1/min: 1250 4th speed 1/min: 2250 2nd speed TD travel mm: 3.50...3.90 Shutoff mm: (3,20,..4,20) electromagnet>Volt: 12 Del. quantity cm3/: 31.1...33.1 Shutoff 1000s.: (29.8...34.4) electromagnet>Volt: 12 1/min: 2000 5th speed 1/min: 2000 3rd speed mm: 5.70...6.50 TD travel Shutoff mm: (5.50,...6.70) > electromagnet>Volt: 12 Del. quantity cm3/: 31.50...33.50 Shutoff 1000s.: (30.20...34.80) electromagnet>Volt: 12 1/min: 1625 6th speed Supply-pump pressure characteristic: Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 29.5...32.5 1/min: 600 1st speed 1000s.: (28.7...33.3) amua-vJaau2 bar: 3.30...3.90 1/min: 1250 8th speed pressure> Shutoff Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 31.0...32.0 electromagnet>Volt: 12 1/min: 1250 2nd speed 1000s.: (29.2...33.8) Supply-pump bar: 5.10...5.70 9th speed 1/min: 600 pressure> Shutoff Shutoff electromagnet>Volt: 12 electromagnet>Volt: 12 1/min: 2000 Del. quantity cm3/: 30.4...33.4 3rd speed 1000s.: (29.6...34.2) Supply-pump bar: 7.20...7.80 pressure> Shutoff electromagnet>Volt: 12 Electr. shutoff: Overlow quantity at overflow valve: 1/min: 410 1st speed 1/min: 600 Del. quantity cm3/: 0.00...3.00 1st speed Shutoff 1000s.: (0.00...3.00) Shutoff electromagnet>Volt: 12 : 41.70...86.10 electromagnet>volt: -Overflow quantity> cm3/10s: (26.70...101.10) 1/min: 2250 2nd speed Damper set qty.: Shutoff electromagnet>Volt: 12 LFG-setting: : 55.60...139.00 Overflow quantity> cm3/10s: (40.60...154.00) Idle delivery: 1/min: 410 Delivery-quant. and breakaway char .: 1st speed Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 7.5011.5 > 1000s.: (5.513.5) Dispersion cm3/: 2.5 > 1000s.: (2.5)  High Idle:	<pre>pressure &gt; : - 0.10.3 # difference&gt; bar: - Shutoff electromagnet&gt;Volt: 12  Automatic starting fuel delivery:</pre>
1st speed 1/mi: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 7.011.0 > 1000s.: (5.013.0)	1st speed 1/min: 310 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 25.045.0 > 1000s.: -  2nd speed 1/min: 210
Rest delivery:  1st speed   1/min: 500 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 1.05.0	Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 45.075.0 > 1000s.: -  4th speed 1/min: 110
> 1000s.: (1.05.0)  Load-dependent start of delivery: Injqty.dif.measurement:	Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 40.0070.00 > 1000s.: -
1st speed 1/min: 1250 Injqty. cm3/ : - 6.08.0 # difference> 1000s.: - Shutoff electromagnet>Volt: 12	Shutoff electromagnet:  Cut-in >min voltage : 10.0 Rated voltage : 12.0
2nd speed 1/min: 1250 Inj.—qty. cm3/: 2.08.0 " Z difference> 1000s.: - Shutoff	Mounting and assembly dimensions:  Designation
electromagnet Volt: 12 3rd speed  1/min: 1250 Charge press. hPa: ALFB Injqty. cm3/: 2.08.0 Z difference> 1000s.: (12 V) Shutoff electromagnet>Volt: 12	+ KF       mm: 3.23.4         + KF       mm: 5.35.5         + MS       mm: 1.11.5         + XK       mm: MAβ A= 0,8         + XL       mm: (MIKRO.)         + Ya       mm: 30.334.3         + Yb       mm: 64.176.9
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : - 1.21.6 " difference> mm: - (1.11.7) Shutoff electromagnet>Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: ALFB TD-travel : 0.00.6	Remarks:  Ya = Distance between VE flange and speed-control lever in idle position  Measurement point = edge of control lever on drive end
difference> mm: (12 V) Shutoff electromagnet>Volt: 12  SP pressdif.measurement: pompa di mandata (FP): 1st speed  1/min: 1250 Supply pump-	Yb = Distance between VE flange and speed-control lever in rated speed position  Measurement point = edge of control lever on distributor-head end

## Z = Absolute delivery

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : REN Test scheet : 11.03.96 Edition replaces Calibrating oil : ISO-4113 Injection pump : VE4/8F2300R652-1 Type number : 0 460 484 104 Customer Part-No. : Customer-specific information Customer : RENAULT Engine : F8Q-646 Power KW: 45 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return>temp. > °C with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly> Opening bar: 127.00...133.00 Pressure> Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length> Start of delivery Prestroke mm: -> (from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1250 Speed

Setting value mm: 3.50...3.90

electromagnet>Volt: 12

Supply-pump pressure 1/min: 1250 Setting value bar: 5.10...5.70 Shutoff electromagnet>Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Del. quantity cm3/ 1000s.: 31.0...32.0 Shutoff electromagnet>Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0) Low-idle speed regulation Speed 1/min: 410 Del. quantity cm3/ 1000s.: 7.50...11.5 Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5) Residual-Delivery Setting 1/min: 500 Del. quantity cm3/ 1000s.: 2.5...3.5 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2450 Speed Del. quantity cm3/ 1000s.: 21.50...27.50 Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 40.0...60.0 mind> 1000s.: 40.0 Shutoff electromagnet>Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 Speed Inj.-qty. cm3/ difference> 1000s.: - 6.5...12.5 * Shutoff

electromagnet>Volt: 12

TD-travel dif.measurement

Shutoff

		+		
1.Speed 1/min:	1250	+		n: 2950
TD-travel	0 ( 0 0 )	†	Shutoff	. 40
	- 0.60.8 *	†	electromagnet>Vol	
Shutoff	13	†	Del. quantity cm3	
electromagnet>Volt:	12	Ť		.: (0.005.00)
7	4	†	2nd speed 1/mi	n: 2030
Inspection pump tes		†	Shutoff	÷. 43
Test specifications	in parentheses	†	electromagnet Vol	t: 12
T2-2		†	Del. quantity cm3	/: 5.515.5
Timing-device chara	cteristic:	†		.: (4.514.5)
4-+	<b>(00</b>	†	3rd speed 1/mi	n: 245U
1st speed 1/min:		†	Shutoff	. 43
	0.801.60	†	electromagnet>Vol	
	(0.601.80)	†	Del. quantity cm3	
electromagnet>Volt:		†		.: (20.528.5)
2nd speed 1/min:		†		n: 2250
	3.503.90	†	Shutoff	. 45
	(3.204.20)	†	electromagnet>Vol	
Shutoff	40	+	Del. quantity cm3	
electromagnet>Volt:		+		.: (29.834.4)
3rd speed 1/min:		+	5th speed 1/min	n: 2000
	5.706.50	+	Shutoff	
	(5.506.70)	+	electromagnet>Vol	t: 12
Shutoff		+	Del. quantity cm3	/: 31.5033.50
electromagnet>Volt:	12	+		.: (30.2034.80)
		+	6th speed 1/min	դ։ 1625
Supply-pump pressure	e characteristic:	+	Shutoff	
		+	electromagnet>Vol	
1st speed 1/min:	600	+	Del. quantity cm3.	/: 29.532.5
Supply-pump		+	> 1000s	.: (28.733.3)
pressure> bar:	3.303.90	+	8th speed 1/min	n: 1250
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt	t: 12
2nd speed 1/min:		+	Del. quantity cm3	<b>/:</b> 31.032.0
Supply-pump		+		.: (29.233.8)
pressure> bar:	5.105.70	+	9th speed 1/mir	n: 600
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt	:: 12
3rd speed 1/min:	2000	+	Del. quantity cm3/	<b>/:</b> 30.433.4
Supply-pump		+	> 1000s.	: (29.634.2)
	7.207.80	+		
Shutoff		+		
electromagnet>Volt:	12	+		
_		+	Electr. shutoff:	
Overlow quantity at	overflow valve:	+		
•		1	1st speed 1/mir	n: 410
1st speed 1/min:	600	+	Del. quantity cm3/	': 0.003.00
Shutoff		+		: (0.003.00)
electromagnet>Volt:	12	1	Shutoff	
	41.7086.10	+	electromagnet>volt	:: -
quantity> cm3/10s:		1		
2nd speed 1/min:		+	Damper set qty.:	
Shutoff		+	A	
electromagnet>Volt:	12	1	LFG-setting:	
	55.60139.00	1		
quantity> cm3/10s:		1	Idle delivery:	
deministrate emotions		1		
Delivery-quant. and	breakaway char.:	‡	1st speed 1/mir Shutoff	: 410

<pre>electromagnet Volt: 12 Del. quantity cm3/: 7.5011.5 &gt; 1000s.: (5.513.5) Dispersion cm3/: 2.5</pre>	<pre>+ pressure &gt; : - 0.10.3 # + difference&gt; bar: - + Shutoff + electromagnet&gt;Volt: 12</pre>
> 10008.: (2.5)	+ Automatic starting fuel delivery:
High Idle:	1st speed 1/min: 310
1st speed 1/mi: 500 Shutoff	Shutoff  electromagnet>Volt: 12
electromagnet>Volt: 12 Del. quantity cm3/: 7.011.0 > 1000s.: (5.013.0)	Del. quantity cm3/: 25.045.0 > 1000s.: -
Rest delivery:	+ 2nd speed 1/min: 210 + Shutoff
1st speed 1/min: 500 Shutoff	+ electromagnet>Volt: 12 + Del. quantity cm3/: 45.075.0 + > 1000s.: -
electromagnet>Volt: 12 Del. quantity cm3/: 1.05.0 > 1000S:: (1.05.0)	4th speed 1/min: 110 Shutoff electromagnet>Volt: 12
Load-dependent start of delivery: Injqty.dif.measurement:	Del. quantity cm3/: 40.0070.00
1st speed	Shutoff electromagnet:
difference> 1000S.: - Shutoff	+ Cut-in ->min voltage : 10.0
electromagnet>Volt: 12 2nd speed   1/min: 1250 Injqty.   cm3/: 2.08.0 " Z	+ Rated voltage : 12.0 + Mounting and assembly dimensions:
difference> 1000S.: - Shutoff	+ Designation
electromagnet Volt: 12 3rd speed 1/min: 1250 Charge press. hPa: ALFB Inj.—qty. cm3/: 2.08.0 Z difference> 1000S.: (12 V) Shutoff electromagnet>Volt: 12	K   mm: 3.23.4
TD-travel dif.measurement:	Remarks:
correttore anticipo iniezione (SV):  1st speed 1/min: 1250  TD-travel : - 1.21.6 "  difference> mm: - (1.11.7)  Shutoff electromagnet>Volt: 12  2nd speed 1/min: 1250  Charge press. hPa: ALFB  TD-travel : 0.00.6	Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end
difference> mm: (12 V) Shutoff electromagnet>Volt: 12	Yb = Distance between VE flange and speed-control lever in rated speed position  Measurement point = edge of control
SP pressdif.measurement: pompa di mandata (FP): 1st speed   1/min: 1250 Supply pump-	lever on distributor-head end

## Z = Absolute delivery

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Supply-pump pressure BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1500 Speed Setting value bar: 6.30...6.90 Note inst. in remarks column KSB/AFB Test scheet valve > Volt: 12 : VW : 15.03.96 Edition Shutoff replaces electromagnet>Volt: 12 Calibrating oil : ISO-4113 Full-load del. w/out charge press.: Injection pump : VE4/8F2400R677 : 0 460 484 108 1/min: 1500 Type number Speed Del. quantity cm3/ Customer Part-No. : 1000s.: 31.5...32.5 11 KSB/AFB Customer-specific information valve > Volt: 12 Shutoff Customer electromagnet>Volt: 12 : 1.6 L Dispersion cm3/: 2.5 Engine 1000s.: (3.0) TEST BENCH REQUIREMENTS Low-idle speed regulation Overflow restricti: 1 463 456 303 Speed 1/min: 400 Calibrating-oil Del. quantity cm3/ return>temp. > °C 1000s.: 13.0...17.0 KSB/AFB with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00 valve > Volt: 12 Shutoff Inlet press., bar : 0.30...0.40 electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (3.5) Calibrating nozzle-holder assembly> : 1 688 901 000 Full-load speed regulation Opening bar: 144.00...150.00 1/min: 2550 Pressure> Speed Del. quantity cm3/ 1000s.: 16.0...22.0 Test inj. tubing : 1 680 750 017 KSB/AFB valve Volt: 12 Outside diameter : 6.00 Shutoff x Wall>thickness : 2.00 electromagnet>Volt: 12 x Length> mm: 840 Start: Start of delivery Prestroke 1/min: 100 Speed mm: -Del. quantity cm3/: 31.5...61.5 (from BDC): -1000s.: 31.5 mind> Injection-pump setting values KSB/AFB Volt: 12 Test specifications in parentheses Valve Shutoff electromagnet>Volt: 12 Timing-device travel Inspection-pump test specifications 1/min: 1500 Setting value mm: 3.40...3.80 Test specifications in parentheses AFB/AFB Volt: 12 Timing-device characteristic: valve > Shutoff 1/min: 600 electromagnet>Volt: 12 1st speed mm: 1.20...2.40

TD travel

> mm:	(0.802.80)	+	KSB/AFB	
KSB/AFB	(0.001116100)	1	valve > Volt:	12
	_	7	Shutoff	7.2
		T		12
electromagnet>Volt:		+	electromagnet>Volt:	
2nd speed 1/min:	1000	+	Overflow :	
	1.402.20	+	quantity> cm3/10s:	(40.60154.00)
> mm:	(1.102.50)	+		
KSB/AFB		+	Delivery-quant. and	breakaway char .:
valve > Volt:	12	+		-
Shutoff		1		
electromagnet>Volt:	12	1	1nd speed 1/min:	280 <b>0</b>
3rd speed 1/min:		1	KSB/AFB	2000
	3.403.80	1	valve > Volt:	12
	(3.004.20)	T		12
	(3.004.20)	T	Shutoff	43
KSB/AFB	40	†	electromagnet>Volt:	
valve > Volt:	12	†	Del. quantity cm3/:	
Shutoff		+		(0.003.00)
electromagnet>Volt:	12	+	2nd speed 1/min:	2650
4th speed 1/min:	2400	+	KSB/AFB	
TD travel mm:	6,27.0	+	valve > Volt:	12
	(5.97.3)	1	Shutoff	
KSB/AFB		1	electromagnet Volt:	12
valve > Volt:	12	1	Del. quantity cm3/:	
Shutoff	12	T		(3.013.0)
	43	T		
electromagnet>Volt:	12	†	3rd speed 1/min:	2550
		+	KSB/AFB	
Supply-pump pressur	e characteristic:	+	valve > Volt:	12
		+	Shutoff	
1st speed 1/min:	600	+	electromagnet>Volt:	12
Supply-pump		1	Del. quantity cm3/:	
	3.604.20	1		(16.024.0)
KSB/AFB	0.001.1.1.20	1	4th speed 1/min:	
valve > Volt:	12	1	KSB/AFB	2400
	12	T	valve > Volt:	12
Shutoff	43	T		12
electromagnet>Volt:		+	Shutoff	42
2nd speed 1/min:	1500	+	electromagnet>Volt:	
Supply-pump		†	Del. quantity cm3/:	
pressure> bar:	6.306.90	+		(27.031.0)
KSB/AFB		+	5th speed 1/min:	1500
valve > Volt:	12	+	KSB/AFB	
Shutoff		+	valve > Volt:	12
electromagnet>Volt:	12	1	Shutoff	
3rd speed 1/min:		1	electromagnet>Volt:	12
Supply-pump	2400	1	Del. quantity cm3/:	31 50 32 50
pressure> bar:	9.009.60	1		(30.034.0)
(0.0000.00	9.009.00	T		
KSB/AFB	40	Ť	6th speed 1/min:	000
valve > Volt:	12	†	KSB/AFB	4.5
Shutoff		+	valve > Volt:	12
electromagnet>Volt:	12	+	Shutoff	
		+	electromagnet>Volt:	12
Overlow quantity at	overflow valve:	+	Del. quantity cm3/:	24.027.0
•		+	> 1000s.:	(22.528.5)
1st speed 1/min:	600	1		
KSB/AFB	000	1		
	10	$\mathbf{I}$		
valve > Volt:	16	T	Floors stores	
Shutoff	43	T	Electr. shutoff:	
electromagnet>Volt:		†		. =
	44.4088.80	+	1st speed 1/min:	
quantity> cm3/10s:		+	Del. quantity cm3/:	
2nd speed 1/min:		+	> 1000s.:	(0.003.00)

Shutoff	+ >min voltage : '
electromagnet>volt: -	+ Rated voltage :
KSB/AFB	+
valve > Volt: 12	+ Mounting and assembly
Idle delivery:	Designation
1st speed 1/min. (00	+ K mm:
1st speed 1/min: 400	+ KF mm:
>KSB/AFB	+ MS mm:
valve > Volt: 12	+ Ya mm: 3
Shutoff	+ Yb mm: 4
electromagnet>Volt: 12	+
Del. quantity cm3/: 13.017.0	+ Remarks:
> 1000s.: (9.520.5)	+ :
Dispersion cm3/: 2.5	<del>-</del> :
> 1000s.: (3.5)	Ya = Distance between
2nd speed 1/min: 300	+ speed-control lever
KSB/AFB	position
valve > Volt: 12	+ Measurement point = 6
Shutoff	+ lever on drive end
electromagnet>Volt: 12	+
Del. quantity cm3/: 24.030.0	+
> 1000s.: (21.532.5)	+ Yb = Distance betweer
3rd speed 1/min: 1000	+ speed-control lever i
KSB/AFB	+ position
valve > Volt: 12	+ Measurement point =
Shutoff	+ lever on distributor-
electromagnet>Volt: 12	1 cever on area abacon
Del. quantity cm3/: 0.03.0	T
	Ţ
> 1000s.: -	†
	†
Automatic starting fuel delivery:	†
	†
1st speed 1/min: 350	+
KSB/AFB	+
valve > Volt: 12	+
Shutoff	+
electromagnet>Volt: 12	<del>}</del>
Del. quantity cm3/: 32.042.0	<del>1</del>
> 1000s.: -	1
10000	1
2nd speed 1/min: 500	1
KSB/AFB	I
	T
	Ť
Shutoff	Ť
electromagnet>Volt: 12	†
Del. quantity cm3/: 19.529.5	†
> 1000s.: -	+
	+
4th speed 1/min: 100	+
KSB/AFB	+
valve > Volt: 12	+
Shutoff	+
electromagnet>Volt: 12	1
Del. quantity cm3/: 32.5062.50	1
> 1000s.: -	1
1000 =	I
the staff of cotromographs	Ţ
Shutoff electromagnet:	Ť
	-d

10.0 12.0

y dimensions:

3.2...3.4 5.2...5.6 1.6...2.0 39.4...41.4 45.8...58.7

n VE flange and in idle edge of control

n VE flange and in rated speed edge of control -head end

NO8

Cut-in

Note inst. in remarks column

Test scheet

: PEU

Edition

: 11.03.96

replaces

Calibrating oil

: ISO-4113

Injection pump

: VE4/8F2500R425-13

: 0 460 484 109

Customer Part-No. :

Customer—specific information

Customer

: PSA

Engine

: XUD9 A L3

Power

KW: 51

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return>temp. > °C

with>thermometer>: 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly>

Opening

bar: 127.00...133.00 Pressure>

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall>thickness : 2.00

x Length>

mm: 450

mm: -

Start of delivery

Prestroke

(from BDC): -

Start of delivery block

Piston stroke mm: 0.3

Outlet >

: A

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed

1/min: 1250

Setting value mm: 3.30...3.70

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

1/min: 1250 Speed

Setting value bar: 5.70...6.30

Shutoff

electromagnet>Volt: 12

Full-load del. w/out charge press.:

Speed

1/min: 1250

Del. quantity cm3/

1000s.: 29.7...30.7

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2.0

1000s.: (3.0) >

Low-idle speed regulation

Speed

1/min: 400

Del. quantity cm3/

10005.: 12.0...14.0

> Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/

1000s.: 4.5...5.5

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed

1/min: 2650

Del. quantity cm3/

1000s.: 9.00...13.00

Shutoff

electromagnet>Volt: 12

Start:

Speed

1/min: 100

Del. quantity cm3/: 46.00...48.00

1000s.: 39.50 mind>

Shutoff

electromagnet>Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed

1/min: 1250

Inj.-qty.

cm3/

N09

difference> 1000s.: Shutoff		‡	,		(40.60154.00)
electromagnet>Volt: TD-travel dif.measu		‡	Delivery-quant	t. and	breakaway char.:
1.Speed 1/min: TD-travel		‡	1nd speed Shutoff		
Shutoff	- 0.91.1 *	‡	electromagnet Del. quantity	cm3/:	0.003.00
electromagnet>Volt:	12	1	> 10 2nd speed	UUUS.: I/min:	(0.003.00) 2650
Inspection-pump tes Test specifications		+	Shutoff electromagnet	Volt:	12
Timing-device chara	cteristic:	1	Del. quantity > 10 3rd speed	000s.:	(7.015.0)
1st speed 1/min:	800	+	Shutoff		
	0.401.20 (0.101.50)	İ	electromagneta Del. quantity	:Volt رستارد	12 10 <b>c</b> 25 5
electromagnet>Volt:		1	> 10	000s.:	(17.527.5)
2nd speed 1/min:	1250	+	4th speed 1	/min:	2200
	3.303.70 (2.804.20)	†	Shutoff		45
Shutoff	(2.004.20)	I	electromagnet> Del. quantity	./Sov	32.034.0
electromagnet>Volt:	12	+	> 10	100s.:	(30.835.2)
3rd speed 1/min:	2000	+	5th speed 1	/min:	1250
	7.208.00	+	Shutoff		40
> mm: Shutoff	(6.908.30)	İ	electromagnet>		29.7030.70
electromagnet>Volt:	12	Ţ	> 10	00s.:	(28.0032.40)
		+	6th speed 1		
Supply-pump pressur	e characteristic:	+	Shutoff		45
1st speed 1/min:	500	†	electromagnet> Del. quantity		
1st speed 1/min: Supply-pump	200	I			(28.334.3)
pressure> bar: Shutoff	3.303.90	+			
electromagnet>Volt: 2nd speed 1/min:		İ	Electr. shutof	· <b>f</b> •	
Supply-pump	1250	Į	Lieur. Shutor		
pressure> bar: Shutoff	5.706.30	+	Del. quantity		0.003.00
electromagnet>Volt:		†		00s.:	(0.003.00)
3rd speed 1/min: Supply-pump	2200	İ	Shutoff electromagnet>	vol+•	_
	8.208.80		Damper set qty		
electromagnet>Volt:	12	+			
Overlow quantity at	overflow valve:	<del></del>	LFG-setting: Idle delivery:		
1st speed 1/min:	500	+	Tate actively.		
Shutoff		+		/min:	400
electromagnet>Volt:		†	Shutoff	م لم ا	10
Overflow : quantity> cm3/10s:	41.7086.10	İ	electromagnet Del. quantity		
2nd speed 1/min:		Ţ	> quantity 10	00s.:	(9.017.0)
Shutoff		+	Dispersion	cm3/:	2.0
<pre>electromagnet&gt;Volt: Overflow :</pre>	12 55.60139.00	‡	> 10	00s.:	(3.0)

High Idle: +	Shutoff
+	electromagnet>Volt: 12
1st speed	
Shutoff +	Part-load del.at 3rd injqty.
electromagnet>Volt: 12	terza fermo della portata
Del. quantity cm3/: 8.5010.5	stop (EGR set)
> 1000s.: (5.513.5) +	scarico) (ARF)
†	gaz d'échappement-ARF)
Rest delivery: +	Spacing mm: 12.0
†	4
1st speed 1/min: 500	1st speed 1/min: 1000
Shutoff	Shutoff
electromagnet>Volt: 12	electromagnet>Volt: 12
Del. quantity cm3/: 4.55.5	Del. quantity cm3/: 20.422.4
> 1000s.: (3.07.0)	> 1000s.: (17.425.4)
Land-dependent start of delivery	Automatic stanting fuel delivery
Load-dependent start of delivery:	Automatic starting fuel delivery:
Injqty.dif.measurement:	1st speed 1/min: 350
1st speed	Shutoff
Injqty. cm3/ : -5.07.0 #	electromagnet>Volt: 12
difference> 1000s.: - (4.010.0)	Del. quantity cm3/: 20.040.0
Shutoff	> 1000s.: -
electromagnet>Volt: 12	7 100001.
2nd speed 1/min: 1250	2nd speed 1/min: 225
Injqty. cm3/: 2.08.0 " Z	Shutoff
difference> 1000S.: -	electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 37.071.0
electromagnet Volt: 12	> 1000s.: -
3rd speed 1/min: 1250	, , , , , , , , , , , , , , , , , , , ,
Charge press. hPa: ALFB	4th speed 1/min: 100
Inj.—qty. cm3/: 2.08.0 Z	Shutoff
difference> 1000S.: (12 V)	electromagnet>Volt: 12
Shutoff	Del. quantity cm3/: 46.0048.00
electromagnet>Volt: 12	> 1000s.: (39.554.5)
+	
TD-travel dif.measurement:	Shutoff electromagnet:
correttore anticipo iniezione (SV):	_
1st speed	Cut-in
TD-travel : -2.73.7 "	>min voltage : 10.0
difference> mm: -(2.63.8) "	Rated voltage : 12.0
Shutoff +	
electromagnet>Volt: 12 +	Mounting and assembly dimensions:
2nd speed	
Charge press. hPa: ALFB	Designation
TD-travel : 0.00.6	K mm: 3.63.8
difference> mm: (12 V) +	KF mm: -
<del></del>	MS mm: 1.31.5
SP press.—dif.measurement:	XK mm: MIKRO.
pompa di mandata (FP):	XL mm: MASS A=0.8
1st speed	Ya mm: 27.831.8
Supply pump-	Yb mm: 74.085.0
pressure > : - 0.10.3 #	Demand on
difference> bar: -	Remarks:
Shutoff + 12	: -
electromagnet>Volt: 12	Vo - Dictores between UF flower and
2nd speed 1/min: 1250	Ya = Distance between VE flange and
Supply pump-	speed-control lever in idle
pressure > : -1.21.8 " +	position Massurement point - edge of central
difference> bar: -(1.11.9) "	Measurement point = edge of control

lever on drive end

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : FIA : 11.03.96 Edition replaces Calibrating oil : ISO-4113 Injection pump : VE4/8F2100R679 Type number : 0 460 484 112 Customer Part-No. : Customer-specific information Customer : FIAT : X8/96 M720 DT Engine KW: 54 Power TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil

return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder : 1 688 901 022 assembly>

Opening |

bar: 127.00...133.00 Pressure>

Test ini. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 mm: 450 x Length>

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Setting value mm: 5.70...6.10

AFB/AFB

Volt: 12 valve >

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Setting value bar: 7.00...7.60 KSB/AFB valve Volt: 12 Shutoff electromagnet>Volt: 12 Full-load del. with charge press.: 1/min: 1500 Speed Del. quantity cm3/ 1000s.: 43.30...44.30 KSB/AFB valve > Volt: 12 Shutoff electromagnet>Volt: 12 cm3/: 2.5 Dispersion 1000s.: (2.5) Low-idle speed regulation 1/min: 425 Speed Del. quantity cm3/ 1000s.: 12.3...16.3 > KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5) Full-load speed regulation 1/min: 2400 Speed Del. quantity cm3/ 1000s.: 28.20...34.20 KSB/AFB > Volt: 12 valve Shutoff electromagnet>Volt: 12 Start: 1/min: 100 Speed Del. quantity cm3/: 50.00...80.00 1000s.: 50.00 mind> KSB/AFB > Volt: 12 Valve Shutoff electromagnet>Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1500 Speed Inj.-qty. cm3/difference> 1000s.: 11.0...17.0 * KSB/AFB > Volt: 12 valve Shutoff

Speed

1/min: 1250

electromagnet>Volt: 12	+	1st speed 1/min:	1500
TD-travel dif.measurement	Ŧ		7.007.60
1.Speed 1/min: 1500 TD-travel	‡	KSB/AFB valve > Volt:	12
difference> mm: 0.700.90 KSB/AFB	Ì	Shutoff electromagnet>Volt:	
valve > Volt: 12	+	2nd speed 1/min:	
Shutoff electromagnet>Volt: 12	Ŧ	•	5.606.20
Inspection-pump test specifications	‡	KSB/AFB valve > Volt:	12
Test specifications in parentheses	<u>†</u>	Shutoff electromagnet>Volt:	12
Timing-device characteristic:	1	3rd speed 1/min: Supply-pump	
1st speed 1/min: 600	+	pressure> bar:	8.509.10
TD travel mm: 2.404.40 B > mm: (1.904.90)	#	KSB/AFB valve > Volt:	12
KSB/AFB	+	Shutoff	
valve > Volt: - electromagnet>Volt: 12	1	electromagnet>Volt:	12
2nd speed 1/min: 300	1	Overlow quantity at	overflow valve:
TD travel mm: 2.002.60 A	+	4.	400
> mm: (1.702.90) <sb afb<="" td=""><td>1</td><td>1st speed 1/min: KSB/AFB</td><td>600</td></sb>	1	1st speed 1/min: KSB/AFB	600
valve > Volt: -	+	valve > Volt:	12
Shutoff electromagnet>Volt: 12	+	Shutoff electromagnet>Volt:	10
Brd speed 1/min: 600	Ţ	Overflow :	41.7086.10
TD travel mm: 3.404.40	1	quantity> cm3/10s:	
> mm: (1.904.90) (SB/AFB	╬╌╇╌╇╌╇ <del>╌╇</del> ╌╬╌╬╼╇╾╋ <del>╸╋╸╇╺╇╍╇╸╇</del> ╾╋	2nd speed 1/min: KSB/AFB	
valve > Volt: -	+	valve > Volt:	12
Shutoff electromagnet>Volt: 12	1	Shutoff electromagnet>Volt:	12
4th speed 1/min: 1000	1		55.60139.00
TD travel mm: 2.903.70	+	quantity> cm3/10s:	
> mm: (2.604.00) (SB/AFB	İ	Delivery-quant. and	hreakaway char •
valve > Volt: 12 Shutoff	1	sectively qualities and	Di Calcanay Char
electromagnet>Volt: 12	+	1nd speed 1/min:	2800
5th speed 1/min: 1500	†	KSB/AFB	10
TD travel mm: 5.706.10	İ	<pre>valve &gt; Volt: Shutoff</pre>	12
(SB/AFB	I	electromagnet>Volt:	12
valve > Volt: 12	++++++++++	Del. quantity cm3/:	0.003.00
Shutoff electromagnet>Volt: 12	I	> 1000s.: 2nd speed 1/min:	(0.003.00)
oth speed 1/min: 2100	+	KSB/AFB	2000
D travel mm: 8.509.30	+	<pre>valve &gt; Volt:</pre>	12
> mm: (8.209.60)	1	Shutoff electromagnet Volt:	12
(SB/AFB valve > Volt: 12	I	Del. quantity cm3/:	
Shutoff	1		(8.4018.4)
Lectromagnet>Volt: 12	+	3rd speed 1/min:	
Supply-pump pressure characteristic:	‡	KSB/AFB valve > Volt:	12
minima hamming has a common and again the party of	+	Shutoff	

electromagnet>Volt:	12	+	Del. quantity cm3/: 0.003.00 > 1000s.: (0.003.00)
Del. quantity cm3/:		Ť	
	(26.236.2)	†	3rd speed 1/min: 300
4th speed 1/min:	2100	†	KSB/AFB
KSB/AFB	•	†	valve > Volt: 12
<pre>valve &gt; Volt:</pre>	12	+	Shutoff
Shutoff		†	electromagnet>Volt: 12
electromagnet>Volt:		+	Del. quantity cm3/: 42.047.0
Del. quantity cm3/:		+	> 1000s.: (40.049.0)
	(41.345.9)	+	
5th speed 1/min:	1500	+	Load-dependent start of delivery:
KSB/AFB		+	<pre>Injqty.dif.measurement:</pre>
valve > Volt:	12	+	
Shutoff		+	1st speed
electromagnet>Volt:	12	+	Injqty. cm3/ : 9.011.0 "
Del. quantity cm3/:		+	difference> 1000S.: -
	(41.8045.80)	1	KSB/AFB
6th speed 1/min:		1	valve > Volt: 12
KSB/AFB	.000	1	Shutoff
valve > Volt:	12	1	electromagnet>Volt: 12
Shutoff	12	$\mathbf{I}$	2nd speed 1/min: 1500
	12	T	Inj.—qty. cm3/: 2.08.0 # Z
electromagnet>Volt:		T	
Del. quantity cm3/:		T	difference> 1000S.: (1.009.00)
	(40.344.9)	T	KSB/AFB
7th speed 1/min:	600	+	valve > Volt: 12
KSB/AFB	_	+	Shutoff
valve > Volt:	12	+	electromagnet Volt: 12
Shutoff		+	
electromagnet>Volt:	12	+	TD-travel dif.measurement:
Del. quantity cm3/:	40.143.1	+	correttore anticipo iniezione (SV):
	(39.343.9)	+	1st speed 1/min: 1500
		+	TD-travel : 0.500.90 #
		1	difference> mm: (0.301.10)
		1	KSB/AFB
Electr. shutoff:		1	valve > Volt: 12
		1	Shutoff
1st speed 1/min:	425	1	electromagnet>Volt: 12
Del. quantity cm3/:		1	occool and grices voter. It
> 1000s.:	(0.003.00)	1	SP press.—dif.measurement:
Shutoff	(0.003.00)	1	pompa di mandata (FP):
	_	$\mathbf{I}$	1st speed 1/min: 1500
electromagnet>volt:		T	Supply pump-
KSB/AFB valve > Volt:	13	T	
valve > Volt:	12	T	pressure > : 0.100.30 " difference> bar: (0.100.30)
- 41 4. 1 *		Ť	
Idle delivery:		†	Shutoff
		†	electromagnet>Volt: 12
1st speed 1/min:	425	†	<b>.</b>
>KSB/AFB		+	Part-load del.at 3rd injqty.
valve > Volt:	12	+	terza fermo della portata
Shutoff		+	stop (EGR set)
electromagnet>Volt:		+	scarico) (ARF)
Del. quantity cm3/:		+	gaz d'échappement-ARF)
	(10.318.3)	+	Spacing mm: 12.0
Dispersion cm3/:	2.5	+	
> 1000s.:		+	1st speed 1/min: 1000
2nd speed 1/min:	500	+	KSB/AFB
KSB/AFB		+	valve > Volt: 12
valve > Volt:	12	1	Shutoff
Shutoff	· <del>-</del>	+	electromagnet>Volt: 12
electromagnet>Volt:	12	1	Del. quantity cm3/: 7.809.80
	· <del>-</del>		

```
1000s.: (6.3...11.3)
Automatic starting fuel delivery:
             1/min: 525
1st speed
KSB/AFB
             Volt: 12
           >
valve
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 35.00...55.00
             1000s.: -
             1/min: 400
2nd speed
KSB/AFB
              Volt: 12
valve
          >
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 52.00...72.00
             1000s.: -
             1/min: 100
4th speed
KSB/AFB
          >
              Volt: 12
valve
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 50.00...80.00
             1000s.: -
Shutoff electromagnet:
Cut-in
                   : 10.0
>min voltage
                  : 12.0
Rated voltage
Mounting and assembly dimensions:
Designation
                mm: 3.2...3.4
K
                mm: 4.8...5.0
KF
                mm: 1.1...1.5
mm: 36.0...38.0
MS
Ya
                mm: 63.4...71.4
Yb
Ajustement Potentiometer:
Angle for
          >
                 °: 25.0
pot.
Supply voltage
              volt: 5.0
pot.
     >
Output volt
              volt: 2.04
pot.
Remarks:
Ya = Distance between VE flange and
speed-control lever in idle
position
Measurement point = edge of control
lever on drive end
```

Note inst. in remarks column

Test scheet : REN : 08.12.92

replaces : -

Calibrating oil : ISO 4113

Injection pump : VE4/9F2200R153-2 Type number : 0 460 494 303

Customer—specific information Customer : RNUR

Engine : J8S - 738

TEST BENCH REQUIREMENTS

Calibrating-oil return>temp. > °C

with>thermometer> : 40.00...48.00 Electronically> : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly> : 1 688 901 022

Opening

Pressure> bar: 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall>thickness : 2.00 x Length> mm: 450

Start of delivery
Prestroke mm: > (from BDC): -

Injection-pump setting values
Test specifications in parentheses

Timing-device travel

Speed 1/min: 1460 Charge press. hPa: 800

Setting value mm: 4.00...4.40

Shutoff

electromagnet>Volt: 12

Supply-pump pressure

Speed 1/min: 1400 Charge press hPa: 800 Setting value bar: 5.10...5.70

Shutoff

electromagnet>Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1400 Charge press. hPa: 800 Del. quantity cm3/

> 1000s.: 47.00...48.00

Shutoff

electromagnet>Volt: 12 Dispersion cm3/: 2,5 > 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600 Del. quantity cm3/

> 1000s.: 37.00...38.00

Shutoff

electromagnet>Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/

> 1000s.: 7.00...11.00

Shutoff

electromagnet>Volt: 12 Del. quantity cm3/: 2.5 > 1000S.: (3,5)

Full-load speed regulation

Speed 1/min: 2400 Charge press hPa: 800

Del. quantity cm3/

> 1000s.: 23.00...29.00

Shutoff

electromagnet>Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: - mind> 1000s.: 60.0 Shutoff

electromagnet>Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 2000 Charge press hPa: 800

TD travel mm: 6.20...7.00

> mm: - electromagnet>Volt: 12

2nd speed 1/min:		+	point> hPa:	200
	800	+		4.5
	4.004.40	+	Shutoff	
> mm :	(3.504.90)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	41.0042.00
electromagnet>Volt:	12	+		(38.5044.50)
3rd speed 1/min:	1000	1	2nd speed 1/min:	
	800	1	Charge press. hPa:	
TD travel mm:		1	Shutoff	000
> mm:	(1.603.00)	T		13
	(1.005.00)	T	electromagnet Volt:	
Shutoff	43	Ť	Del. quantity cm3/:	0.003.00
electromagnet>Volt:	12	+	> 1000s.:	
4th speed 1/min:		+	3rd speed 1/min:	
	800	+	Charge press. hPa:	800
	5.706.50	+	Shutoff	
	(5.406.80)	+	electromagnet>Volt:	12
Shutoff		+	Del. quantity cm3/:	2.5017.50
electromagnet>Volt:	12	+	> 1000s.:	-
_		+	4th speed 1/min:	
Supply-pump pressur	e characteristic:	1	Charge press. hPa:	
cable () bamb by contain		1	Shutoff	333
1st speed 1/min:	2000	1	electromagnet>Volt:	12
Charge press. hPa:		1	Del. quantity cm3/:	
<b>-</b> ,	000	Ŧ		(22.0030.00)
Supply-pump	6.907.50	T		
	0.907.30	<b>T</b>	5th speed 1/min:	
Shutoff	10	+	Charge press. hPa:	800
electromagnet>Volt:		+	Shutoff	40
2nd speed 1/min:		t	electromagnet>Volt:	
Charge press. hPa:	800	+	Del. quantity cm3/:	
Supply-pump		+		(42.1046.70)
	5.105.70	+	6th speed 1/min:	
Shutoff		+	Charge press. hPa:	800
electromagnet>Volt:	12	+	Shutoff	
3rd speed 1/min:		+	electromagnet>Volt:	12
Charge press. hPa:		+	Del. quantity cm3/:	
Supply-pump		+		(45.2049.80)
pressure> bar:	2.703.20	1	7th speed 1/min:	
Shutoff	21.011.0120	1	Charge press. hPa:	
electromagnet>Volt:	12	1	Shutoff	000
etectionagnet/vott.	12	1	electromagnet>Volt:	10
Overlow quantity at	overflow valve:	I	Del. quantity cm3/:	// OD // OD
overtow quantity at	over tow valve.	T	> quantity cms/:	44.7047.70
A - +	400	T		(43.4049.40)
1st speed 1/min:		Ť	8th speed 1/min:	
Charge press. hPa:		†	Charge press. hPa:	~
Shutoff		+	Shutoff	
electromagnet>Volt:	12	+	electromagnet>Volt:	
Overflow :	41.683.3	+	Del. quantity cm3/:	
quantity> cm3/10s:	(26.698.3)	+	> 1000s.:	(34.5040.50)
2nd speed 1/min:	2000	+		
Charge press. hPa:	800	+		
Shutoff		+		
electromagnet>Volt:	12	+	Electr. shutoff:	
Overflow :	55.5138.8	+		
quantity> cm3/10s:		1	1st speed 1/min:	425
quality 1031	-,	1	Charge press. hPa:	
Delivery-quant. and	hreakaway char ·	1	Del. quantity cm3/:	
becivery-quant. and	Dicaraway Vilai	I	> 1000s.:	
		Ι	Shutoff	_
And anaid Alada.	700+	T		10
1nd speed 1/min:		T	electromagnet>volt:	16
Charge-air pressure-	secting	+		

```
Idle delivery:
            1/min: 425
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 7.00...11.00
            1000s.: (5.00...13.00)
2nd speed
             1/min: 660
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 0.00...3.00
            1000s.: -
3rd speed
             1/min: 520
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 3.00...7.00
             1000s.: (1.00...9.00)
Automatic starting fuel delivery:
             1/min: 300
1st speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 20.00...40.00
            1000s.: -
             1/min: 180
2nd speed
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 40.00...100.00
            1000s.: -
3rd speed
             1/min: 100
Shutoff
electromagnet>Volt: 12
Del. quantity cm3/: 60.00...100.00
            1000s.: -
Shutoff electromagnet:
Cut-in
>min voltage
                  : 10.0
Rated voltage
                : 12.0
Mounting and assembly dimensions:
Designation
                mm: 3.2...3.4
Κ
KF
                mm: 5.6...6.0
                mm: 1.3...1.7
MS
                mm: 3.6
SVS max.
                mm: 4.5
LDA stroke
                mm: 17.0...19.0
XK
                mm: 10.3...13.7
XL
Remarks:
* Correction at adjusting nut
```

manifold-pressure compensator pressure change.

N19

Operate control lever after each